Profile of the British Columbia High Technology Sector

2000 Edition

A joint project of BC Stats and the
BC Information, Science and Technology Agency

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June 2000

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1 Highlights

High tech continues to outperform BC economy

By all measures, the high technology sector in BC grew in 1998 and 1999 at rates higher than the BC economy as a whole.

High tech GDP up 6.2% to $2.6 billion...

In 1998, constant dollar GDP generated by the high technology sector was $2.6 billion, up 6.2% from 1997.

...outpacing overall BC growth

The BC economy expanded 0.3% in 1998 to $89.0 billion.

In 1998 the high tech sector generated 3.0% of the province's GDP.

Employment up 10% to 52,000

High tech sector employment jumped 10.0% to 52,060 in 1999. Employment in all industries[1] grew only 0.1% (to 1,480,120).

The industries in the high tech sector added 4,700 workers in 1999, offsetting decreases in other industries in the economy.

Current dollar GDP up 6.3%

Including the impacts of inflation, GDP generated by the high tech sector advanced 6.3% to $2.7 billion. High tech GDP has grown in every year since 1985.

$5.7 billion in revenue...

High tech sector revenue reached $5.7 billion in 1998, up 2.5% from 1997. While this was the slowest overall rate of growth since 1991, high tech manufacturing revenues increased 14.2% and computer services advanced 6.3%.

...and $2.3 billion in wages & salaries

In 1999, workers in the high tech sector earned $2.3 billion, an increase of 12.8% over 1998. More than half—$1.4 billion—was in the computer service and engineering service industries.

More than 7,000 high tech establishments

There were 7,349 establishments in the industries of the high tech sector in 1999, up by 506 from 1998. Computer services are the largest single industry in the sector, with 2,297 establishments.

High tech exports: $816 million

Exports of high tech commodities from BC reached $816.4 million in 1999, up 6.0% from 1998. This was the third straight year with an increase in high tech exports.

High tech imports rose 17%

High tech commodities destined for BC rose 16.9% to $3.0 billion in 1999. This was four times the value of the value of high tech commodities that were exported, resulting in a trade deficit in high tech commodities.

[1] Excluding self-employed workers, and workers in commercial fishing and agriculture.

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2 Introduction

The BC high technology sector

This publication is part of an ongoing project to monitor the growth and evolution of the high technology sector in British Columbia. Technology plays a unique role in the economy and in society, deeply affecting the way individuals perform their daily work, the results that come from that work, and the interactions with others at all levels. Aside from its impact on work, productivity, and society, the high technology sector is a growing source of employment and revenues, making it of interest in practical as well as theoretical terms.

The high technology sector continues to evolve as economic conditions change, and as technology continues to advance. Products and firms come and go, and what was once high technology becomes suitable only for the museum. For example, the Corona #3 typewriter was a high technology item when it was introduced in 1912, and one of the biggest sellers of all time. However, it is now a quaint collector's item. Even the manufacturer, despite many adaptations to changing technology, has now been delisted from the NASDAQ and is in receivership.

The environment of continual change in the high technology sector is mirrored by changes in its statistical monitoring. With each edition, this "Profile" introduces updates, and improvements in methods. More fundamental changes, to the concept of the sector and what information should be gathered about it are also underway.

The Sector Definition is Changing

Not only firms, but also the industries that comprise the high technology sector are subject to change. The table following shows the sector components that have been used in constructing the current report. During the coming year, each industry will be re-evaluated with respect to its products, its performance of research and development, and the training of its labour force. In addition, the process of adapting to the new North American Industry Classification System (NAICS) will be initiated. Once enough data sources have converted to NAICS, the system will allow for newly defined industries to become part of the sector definition. Research on these developments will be published by BC Stats as it becomes available.

The table lists the industries that are defined, for the purpose of the present report, to constitute the high technology sector in British Columbia. Where the weight column indicates a "✓", 100% of the industry is included in the high technology sector. In those cases where numbers are given, only the indicated percentage of the industry meets the definition of high technology.

More information on this definition and the weighting is available in the 1995 paper *Defining the High Technology / Knowledge Sector in British Columbia*[1].

Industries[2] in the High Technology Sector

SIC[3]	Industry	Sector	Weight
3211	Aircraft and Aircraft Parts Industry	Manufacturing	✓
3351	Telecommunications Equipment Industry	Manufacturing	✓
3352	Electronic Parts and Components	Manufacturing	✓
3359	Other Communication and Electronic Equipment	Manufacturing	✓
3361	Electronic Computing and Peripheral Equipment	Manufacturing	✓
3362	Electronic Office, Store and Business Machines	Manufacturing	✓
3369	Other Office, Stores and Business Machines	Manufacturing	✓
3372	Electrical Switchgear and Protective Equipment	Manufacturing	✓
3379	Other Electrical Industrial Equipment Industries	Manufacturing	✓
3741	Pharmaceutical and Medicine Industries	Manufacturing	✓
3911	Indicating, Recording and Controlling Instruments	Manufacturing	✓
3912	Other Instruments and Related Products	Manufacturing	✓
772	Computer and Related Services	Services	✓
7752	Offices Of Engineers	Services	✓
7759	Other Scientific and Technical Services	Services	✓
868	Health and Other Medical Laboratories	Services	✓
3192	Construction, Mining Machinery and Materials Handling	Manufacturing	13
3194	Turbine and Mechanical Power Transmission Equipment	Manufacturing	6
3199	Other Machinery and Equipment Industries N.E.C.	Manufacturing	3
3271	Shipbuilding and Repair Industry	Manufacturing	11
3381	Communications and Energy Wire and Cable Industry	Manufacturing	41
3711	Industrial Inorganic Chemical Industries N.E.C.	Manufacturing	10
3994	Musical Instrument and Sound Recording	Manufacturing	11
3999	Other Manufactured Products Industries	Manufacturing	6

Changes to this edition of the report

This report maintains and updates all the features of the 1999 edition. There is also a new table, showing average weekly earnings in each of the high technology industries. The most important change is more subtle; we've adopted an improved method of calculating BC imports of high technology commodities that yields a far more reliable estimate.

[1] Available from BC Stats at http://www.bcstats.gov.bc.ca/DATA/BUS_STAT/hi_tech/ht_def.pdf

[2] For the purposes of this report, SIC industries 3741 and 3711 are grouped together as "37grp", and 3271, 3381, and 3994 combine to form "3grp".

[3] "SIC" is an abbreviation for Standard Industrial Classification, a hierarchical method of grouping similar industries.

The report continues to include the latest information available at the time of publication for each of the variables covered. In most cases the data refer to the calendar year 1999. However, some information extends only to 1997 or 1998 as indicated below:

Data availability

Variable/Year	1997	1998	1999
GDP	✓	✓	
Employment	✓	✓	✓
Wages & salaries	✓	✓	✓
Revenues	✓	✓	
Establishments	✓	✓	✓
Exports & imports (goods)	✓	✓	✓
Exports (services)	✓		

Readers should note that graphs and text in this publication only deal with the highlights of the information that has been collected. The data tables in the final sections contain additional detail that can prove valuable. These tables extend from 1989. Data extending back as far as 1984 is available for some of the data series by special request.

"The British Columbia High Technology Sector Input Indicators Report: The 1990s"

In addition to updating and developing this "Profile", BC Stats has developed other measures of the high technology sector. This publication summarizes the outputs of the industries in the high technology sector in BC: GDP, revenue, employment, establishments, and import and export trade. While there is obvious value in monitoring the performance of the sector, informed policy making requires information on the processes that give rise to that performance. The high technology sector and the infrastructure network that surrounds it is a complex system with many players and interactions. For this reason, a second "Input Indicators" annual report is being produced as a companion to this one. This second report provides measures of the inputs to the high technology sector and the overall climate of innovation. It covers forty separate types of activity with respect to high technology in the educational, business, government, external, and labour sectors for the past ten years. Whenever possible, the indicators are presented in comparison to other provinces, which serve as benchmarks for the situation in our own province.

Interprovincial and International Comparisons

This report tracks the performance of the high technology sector over time, and also compares its size and performance to other sectors in the British Columbia economy. However, the question often arises as to how high tech in British Columbia compares to other provinces, neighbouring US states, and other countries.

As can be seen from the preceding chart of industries and sub-industries, the high tech sector is very carefully defined for use in this report. This detailed definition is required to avoid too broad or too narrow a focus, either of which would seriously limit the usefulness of the results. The definition is supported by obtaining data that is finely broken down in terms of industry. In many cases this involves special tabulations, or data that is available to BC STATS only for our own province. This greatly limits the ability to produce valid comparisons for other jurisdictions.

However, work is ongoing to overcome these limitations. The "Indicators" publication mentioned earlier will contain employment comparisons for high technology by province, using an industry definition based on data that is readily available. BC STATS is working on improving this definition, and plans to release further interprovincial comparisons for employment and also GDP in the future.

International comparisons are also on the agenda, and will follow at a later stage.

3 Profile and Trends I
The High Technology Sector's Contribution to the BC Economy

Two types of industries

Throughout this report, we speak of two types of industries within the high tech sector: service and manufacturing.

The high tech service industries–computer services, engineering, scientific and technical, and medical laboratories–don't make a tangible good. Instead they provide expertise, such as in software creation, information technology system management, the planning and design of a bridge, or the analysis of a blood sample for a medical diagnosis.

The manufacturing industries are those that take raw materials, or the products made by other manufacturing industries, and make new products. High technology firms include aircraft construction (which includes aerospace manufacturing), assorted electronic manufacturing, and pharmaceutical manufacturing.

The place of the high technology sector in the BC economy

In terms of growth, the high technology sector has outpaced the BC economy as a whole.

BC's high technology sector has been growing over the past decade and a half, and by every measure that growth has outpaced the provincial economy as a whole. In spite of rapid growth, the sector remains a small part of the whole economy. By the end of the nineties, the high technology sector accounted for roughly three per cent of provincial GDP and employment, and just over four per cent of wages and salaries and establishments. While this proportion may seem relatively insubstantial, it is important to remember that BC is maturing into a diverse economy where no single industry dominates economic activity. Sectors of similar size to the high technology sector include the utilities industries and communication services. The financial, insurance and real estate sector[1] generates the greatest amount of GDP, with just under 10% of total.

The general structure of BC's high technology sector

While the high technology sector in BC is made up of many individual industries, it is more revealing to examine the sector as being made up of four broad groups of roughly equal size. The varied high technology manufacturing industries make up the first group. The individual service industries of computer and related services and engineering services are both of about equal size to each other and to the manufacturing industries group. The fourth portion of the sector consists of the two remaining high technology service industries, scientific and technical services and medical laboratories.

The dominance of the high technology service industries is apparent in every measure of the sector, from GDP to employment. By the measures presented in this report, these industries account for between two-thirds and three-quarters of the sector.

[1] Excluding owner-occupied dwellings.

Constant dollar GDP

GDP is a measure of value added, essentially the difference between the cost of the material inputs used to create a product or service and the price at which it is sold. Thus GDP includes wages and profits, and is therefore an excellent measure of the contribution of an industry to the total value of production in the economy.

There are two ways of reporting GDP: current and constant dollars. Constant dollar GDP is the most commonly used measure.

The "constant dollar" expression means that the GDP values have been corrected for the impact of price changes–inflation and deflation. Reporting data in constant dollars is one way of showing the change in the output of an industry. For example, if a high technology manufacturing firm sells the same number of widgets from one year to the next, the outputs have not increased and thus, all else being equal, the **constant** dollar GDP would not change. But if that firm charged an extra 2% for each widget sold in the second year, its **current** dollar GDP would increase by 2%.

Thus constant dollar GDP tells us the real change in output–this is why constant dollar GDP is sometimes referred to as "real GDP."

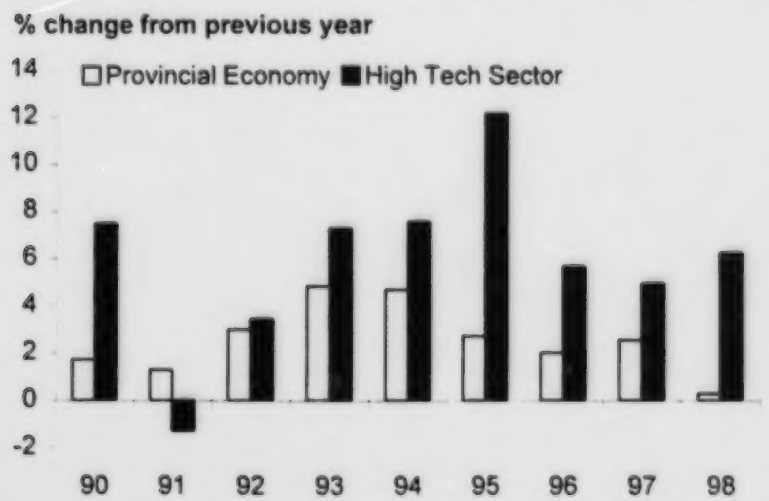
High technology sector GDP outpaces rest of economy

High technology sector GDP advanced 6.2% in 1998, reaching an estimated $2.6 billion 1992 (constant) dollars. This is the highest growth since 1995 and exceeds the 5.7% average growth recorded thus far in the 1990s.

In 1998 the high technology sector's growth was roughly six percentage points higher than the overall provincial economy, which marked time in 1998 with a marginal increase of 0.3%. The only other year during the 1990s that the high technology sector outperformed the overall economy by such a large margin was in 1995, when it outpaced the economy by more than nine percentage points.

Growth in the high technology sector has outpaced the general economy in all but one year in the 1990s. High technology now accounts for 3.0% of BC's GDP, up from 2.3% in 1990.

High technology GDP growth outpaces BC economy again



High tech manufacturing has recorded strong growth during the '90s.

Although the service industries dominate the high technology sector in terms of size, high technology manufacturers realized greater percentage GDP growth in 1998. The manufacturing industries have proven quite volatile over the decade, but have logged an average GDP growth rate of 10.9%[2]. This compares to 4.4% for high technology service industries over the same period.

During 1998, fast growing manufacturing industries included electronic computing and peripheral equipment (+32.9%) and indicating, recording, and controlling instruments (+29.5%). While both sector number of firms allows for substantial percentage changes year by year.

GDP (constant 1992 dollars), 1998

	$ million	% change
High technology manufacturing	648.3	20.1
High technology services	1,988.2	2.3
High technology sector: total	**2,636.5**	**6.2**
BC total	**88,950.7**	**0.3**

The growth edge held by the manufacturing industries has resulted in manufacturing occupying a rising share of the total sector GDP. However, services dominate overwhelmingly, with over 75% of the sector in 1998. Computer services, the largest generator of high technology GDP ($815.4 million), had GDP growth of 8.2%, giving it the largest increase of any high technology industry ($61.5 million).

The rapid growth of the high technology sector often leads to the question of whether it is in fact the fastest growing sector in the economy. This is a question that can never be answered quite satisfactorily. The reason is that there is no single definition of what comprises the "sectors" for the remainder of the economy. Larger and smaller aggregations are routinely used by analysts for a variety of purposes. However, it can safely be said that the high technology sector has been close to the top in GDP growth for most of the decade.

During 1998, the high technology sector outperformed most other major activities in the provincial economy. Overall, the goods producing industries (including primary industries) saw GDP slide in 1998 (-2.5%), while the service industries—roughly three times as big—had an increase of 1.2%. Of the major sectors, only the communications services industry, with GDP growth of 7.1% (and total GDP of $2.9 billion), outpaced the high technology sector.

From 1990 to 1998, the high technology sector had annual average growth of 5.7% while the BC economy grew 2.6% per year. Through this period, the only other major economic activity to have growth over four per cent was finance, insurance and real estate[3] (+4.4%).

[2] Compound rate.
[3] Excluding owner-occupied dwellings.

Employment in the high tech sector

This measure of employment is based on Statistics Canada's Survey of Employment, Payroll and Hours (SEPH). This employer survey provides a wealth of detail about employment, wages, and hours in a large number of industries. However, because it is an employer survey, the SEPH data does not include self-employed workers, and workers in both commercial fishing and agriculture.

The data from SEPH give the average number of workers in an industry through the course of the year. If an industry is highly seasonal, the peak number of workers is offset by those months where there are fewer workers. A full-time worker is accorded equal status with a part-time worker; no attempt is made to measure the number of "person years" or "full time equivalents."

High technology employment continues to grow

High tech sector employment topped 50,000 for the first time in 1999.

For the tenth year in a row, employment in the high technology sector was up from the previous year. In 1999, 52,060 workers were employed in the sector, up 10.0% from 1998. Employment growth in BC overall during 1999 was limited to 0.1%, and stood at 1,480,120.[4] 1999 was the tenth straight year that high technology employment has outpaced BC's overall employment growth.

Employment, 1999

	Workers	% change
High technology manufacturing	11,260	20.2
High technology services	40,800	7.5
High technology sector: total	**52,060**	**10.0**
BC total	**1,480,120**	**0.1**

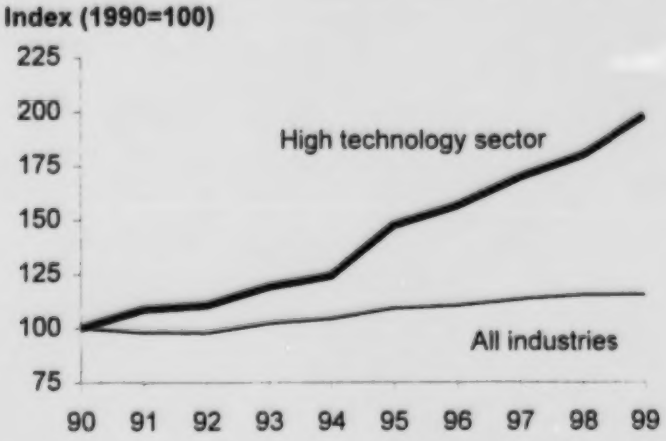
Another way to look at high technology's growth in the context of BC's overall performance is to examine the net increase in workers. The high technology sector added over 4,700 jobs in 1999, while the overall growth was limited to 1,400. This discrepancy is due to the fact that a number of industries lost jobs, led by a 3,900 worker drop in the construction industry.

The nineties saw the number of high technology workers double.

This long run of growth has doubled the number of workers in the high technology sector during the nineties. The sector's growth is all the more impressive when compared to overall employment growth in BC over the same period, which has increased only 15%. The sustained growth in the high technology sector means that its share of provincial employment has increased during the nineties. The high technology sector's share of provincial employment jumped from 2.1% of total employment in 1990 to 3.5% in 1999.

[4] This growth rate is based on Statistics Canada's Survey of Employment, Payroll and Hours. The more frequently cited Labour Force Survey (which includes self-employed workers, as well as workers in commercial fishing and agriculture) reports that for 1999, employment in BC grew 1.9%.

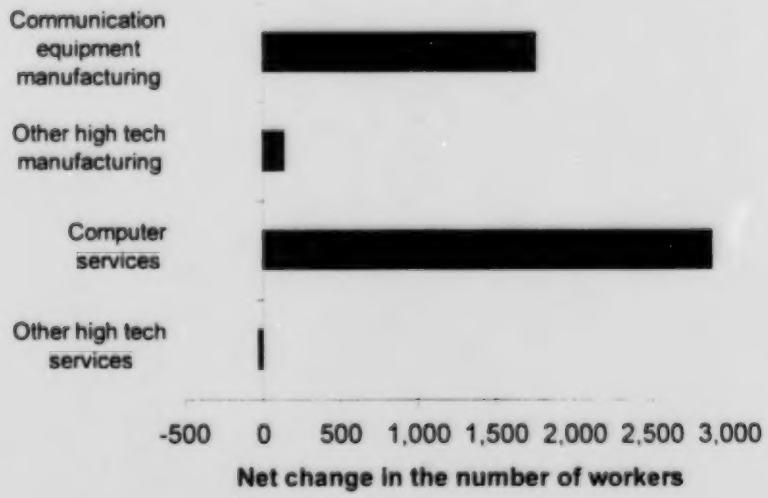
High technology employment doubled in the nineties



In 1999, two industries created almost all of the additional jobs in the high technology sector. The biggest creator of high technology jobs in 1999 was once again computer services. In 1999 the industry added 2,890 new workers, bringing the total to 16,600. This was the fourth consecutive year that the computer service industry has created more jobs than any other high technology sector industry. In the four years since 1995, computer services has accounted for just over half of all of the new high technology sector jobs that have been created (7,110 additional jobs in computer services of the 13,230 new jobs in the sector as a whole).

Two of the fastest growing high tech industries are computer services and communication equipment manufacturing.

Two industries dominate high tech job creation in 1999



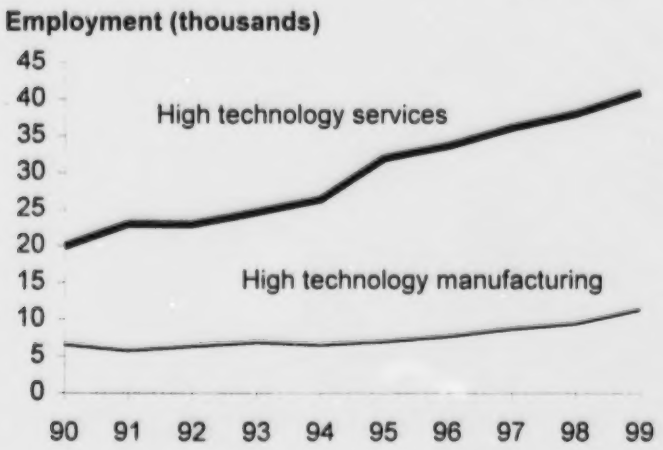
Communication equipment manufacturing now represents almost half of all high tech manufacturing jobs.

In 1999, communication and other electronic equipment manufacturing added 1,760 new jobs, pushing the total to 5,220. This was the third straight year and the fourth time in five years that the industry had double-digit employment growth. Furthermore, over that five year period the industry has accounted for two-thirds of the new jobs in high technology manufacturing. Employment in communication and other electronic equipment manufacturing now accounts for nearly one-half of BC's high technology manufacturing jobs, up from roughly one-third in 1990.

The second and third largest industries in the high technology sector both saw employment levels slip during 1999. Engineering services employed 14,520 workers, a 2.0% drop. After booming in the years 1993 through 1995, scientific and technical services saw employment fall for the second straight year and for the third time in four years. Employment in the industry stood at 6,470—a decline of 200 workers from the 1995 peak.

In every year since 1996, employment growth in the manufacturing industries in the high technology sector has outpaced the service industries' performance. In spite of that, the service industries still dominate total employment in the sector. In 1999, the service industries employed 40,800 workers, nearly 4 of every 5 workers in the sector.

In spite of faster growth, high tech manufacturing is still a small part of the sector's employment



Measuring productivity changes: comparing real GDP growth with employment changes

Looking at the difference in constant dollar GDP growth–real changes in output–and employment shows changes in labour productivity. If real GDP growth is outpacing increases in employment, this shows that individual workers are producing more and that capital is being used more efficiently. What these data don't show, however, are the extent to which the changes in productivity may be due to changes in capital or changes in the hours of work.

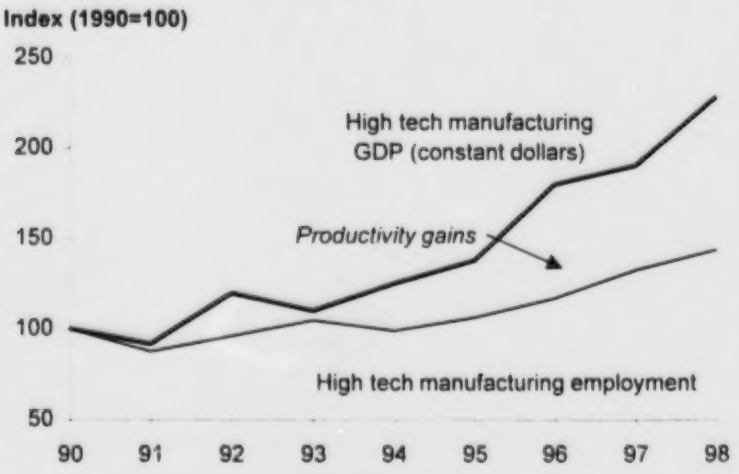
Productivity on the rise

Real GDP in high technology manufacturing more than doubled, while employment increased by less than 50%, during the period 1990 through 1998. This suggests that significant advances in labour productivity have been made—the manufacturing industries are making more goods per worker than at the start of the decade.

Substantial productivity growth has been achieved in high tech manufacturing during the '90s.

Advances in productivity can originate in a number of areas. The capital used to produce the goods can be used more intensely, and labour can be used more efficiently. In British Columbia, many high technology manufacturing establishments have begun to mature, moving from a product development phase (when few goods for market are being produced) to full-scale production. Over time, we might expect to see productivity gains level off as the high technology manufacturing sector begins to mature.

High tech manufacturing productivity growth points to a maturing industry



In contrast, the high tech services recorded little productivity growth during the '90s.

The service industries in the high technology sector have not registered gains in productivity; in fact, employment growth has outpaced GDP increases. In the years 1990 through 1998, employment grew at nearly double the rate of GDP. In computer services, employment and GDP matched growth over the period (about 2.5 times). Engineering services, on the other hand, saw increasing employment (nearly two-thirds more workers) with no corresponding increase in outputs.

How can the discrepancy between the productivity gains in the manufacturing industries compared to the losses in the services be explained? Foremost is the fact that the service industries are more labour intensive, and thus there is little potential for productivity gains to be made through a more efficient use of capital. Capital can easily displace workers when people are used to perform repetitive, mechanical tasks, but in the case of high technology services, the product being sold (such as engineering designs or software programs) is created directly from the individual intellect and knowledge of the workers. The high technology service industries also have a shorter "start-up" period, with a short, intense development phase—a new firm can hit the ground running.

Current dollar GDP

Like its constant dollar counterpart, current dollar GDP is a measure of value added, essentially the difference between the cost of the material inputs and services used to create a product or service, and the price at which it is sold. But current dollar GDP leaves in the impact of inflation. During periods of rapid price change–which have been seen in some high technology industries–price effects can mask changes in the volume of output. However, current dollar GDP has the advantage of showing the buying and investing power of incomes in the industry.

Current dollar GDP up

High tech GDP (current dollars) has been on the rise since 1985.

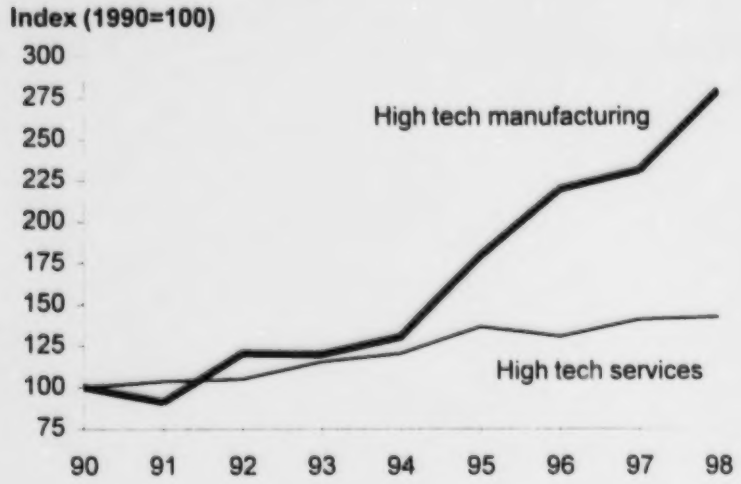
Current dollar GDP in the high technology sector was up 6.3% in 1998, rising to $2.7 billion. The high technology sector's GDP has been growing in every year since 1985.

In 1998, the high technology sector outperformed the BC economy, which saw current dollar GDP shrink 0.2%. This was the second consecutive year, and the third year in the previous four, that the high technology sector has grown more rapidly than the provincial economy as a whole; in each of those years, the high technology sector's performance has been substantially stronger.

Impressive growth in the high technology manufacturing industries (+21.0%) made up for comparatively slim gains in the service industries in the sector (+1.1%). 1998 was the third year since 1995 that high technology manufacturing industries have achieved double-digit growth rates, pushing their share of the sector's GDP up to nearly one-third, up from one-sixth in 1991.

A large part of the growth in the manufacturing industries was due to strength in aircraft and aircraft parts manufacturing and the manufacturing of electronic computing and peripheral equipment, both of which generated roughly one-third more GDP in 1998 than in 1997.

Manufacturing GDP continues to fly



While the computer services industry did relatively well in 1998 (rising 8.0% to $794 million), engineering services saw GDP drop for the second time in three years (-3.8%). Engineering services, in spite of being a large part of the high technology sector and an "established" industry, has demonstrated a remarkable amount of volatility. Current dollar GDP in the industry was lower in 1998 than in 1990, the only part of the high technology sector to see a decline through the decade. By comparison, computer services has more than doubled over the same period.

As was the case for employment, 1998 was a weak year for engineering services GDP.

Price changes: comparing current and constant dollar GDP

Comparing the constant and current dollar measures reveals the degree of price change of both the outputs and inputs in an industry. In the high tech sector this is particularly important, since some industries have experienced price deflation in recent years as rapid change in technology drives prices down (for example, personal computers).

1998 saw little change in high tech prices

In 1998, constant dollar GDP and current dollar GDP grew at almost exactly the same pace, indicating that across the entire sector there was no overall inflation or deflation. This statement, however, misses the fact that price increases in many of the manufacturing industries were offset by deflation in most (but not all) of the service industries in the sector. After three years of increases, prices in computer services levelled off, while prices in engineering services were down for the second time in three years.

Revenue

Revenue is the amount of money earned from the sale of goods or services by producers in an industry. It is a measure of the monetary value of an industry's goods or services, and in the manufacturing sector is measured through the value of shipments.

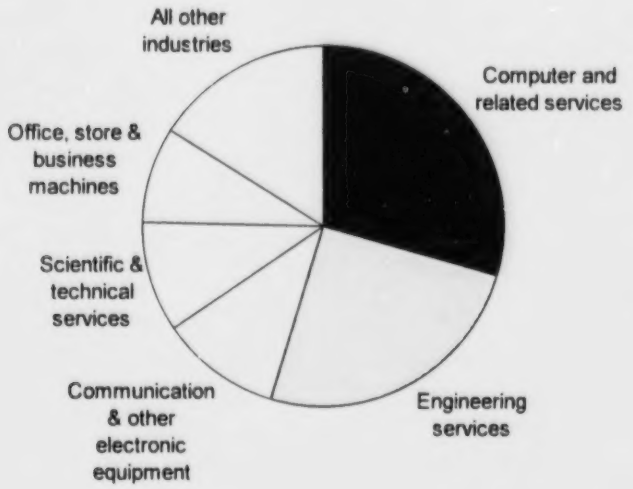
Revenue includes the cost of the inputs necessary to make the good or service, while GDP is the amount remaining after all costs (except labour costs) have been paid.

High technology revenue has grown at double-digit rates in every year since 1994, and has tripled in the ten years since 1989.

Revenue growth in 1998 slows to lowest rate since '91

The high technology sector earned $5.7 billion during 1998, an increase of 2.5%. While this was the second straight year that the sector's revenue has exceeded five billion dollars, the growth rate was the smallest increase since revenue fell 5.3% in 1991, when an economic recession slowed growth across North America.

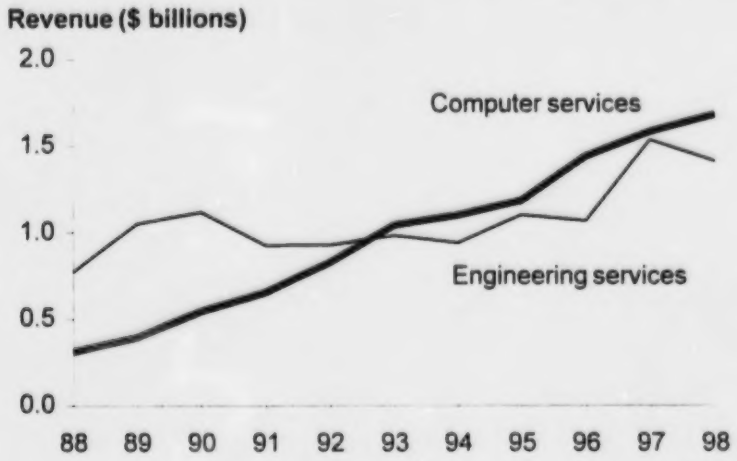
Computer services & engineering services earn over half of high tech revenue



Computer services revenue was up, but engineering revenue was off in 1998.

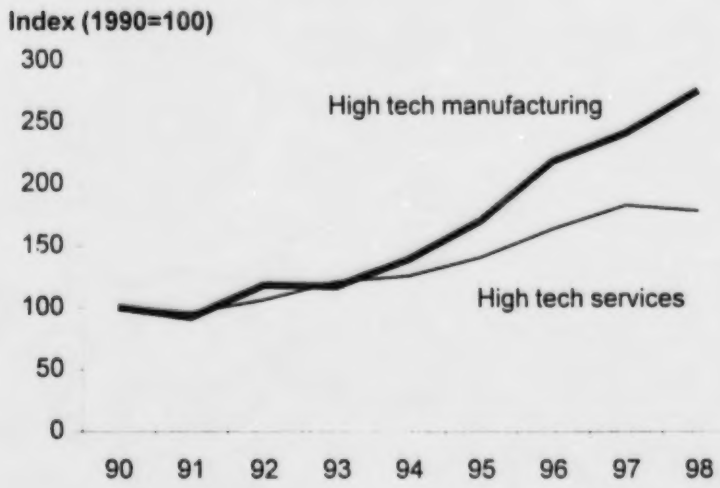
Computer services—the sector's biggest revenue earner—had revenue of $1,677 million, an additional $99 million (+6.3%) higher than 1997. This gain was not enough to offset declines in all of the other service industries in the high technology sector, as overall revenue in high technology services fell 2.6%. A large part of the decline was in engineering services, which slipped 7.9% from 1997. The drop in engineering revenue might be tied to the slow-down in the provincial construction industry; in both 1997 and 1998, the construction industry's GDP was down, as was the value of building permits issued in BC.

Over the past decade, computer services have boomed while engineering services have grown by fits and starts



Over the long term, computer services revenue has come from behind to surpass engineering services. In the late eighties, engineering services was the dominant industry, earning twice as much revenue as computer services. In 1993, the paths crossed, and since then the revenue of engineering services has lagged slightly behind that of computer services.

High tech service revenue not keeping pace with manufacturing



As with other indicators of economic performance, the manufacturing industries in the high technology sector account for a much smaller portion of the sector's revenue than the service industries, but revenue has grown more rapidly than that of the services since the middle of the decade. 1998 saw manufacturing industry revenue gain 14.2% over 1997 to reach $1,916 million. The largest part of the increase in manufacturing revenue was in aircraft

and aircraft parts manufacturing, where revenue rebounded $78.3 million from 1997's decline to stand at $247.3 million. Communication and other electronic equipment manufacturing also had strong revenue growth, up 13.9% to $617.0 million.

Wages and salaries

Wages and salaries are based on the earnings of all workers in an industry who are on the payroll, from working owners and senior executives to junior support staff. While overtime and bonus pay is included, other benefits such as medical plans, stock options, and time off in lieu of overtime are not.

Like the employment values reported earlier in this report, the wages and salaries data are calculated using source data from Statistics Canada's Survey of Employment, Payroll and Hours.

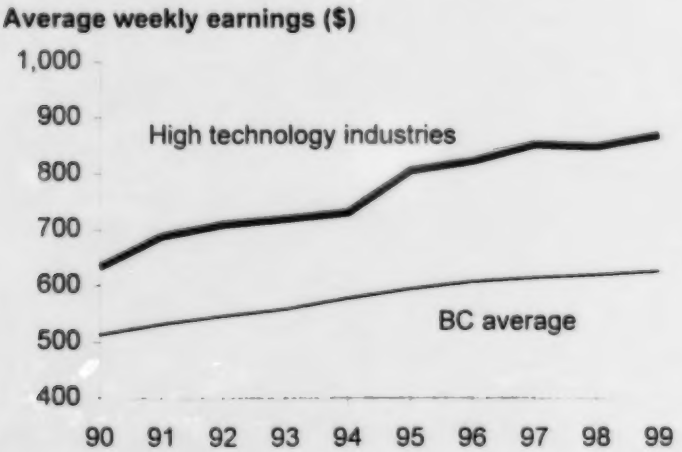
High tech wages and salaries up 12.8% in '99

Workers in the high technology sector earned a total of $2.3 billion in 1999, up 12.8% from 1998. The high technology sector advanced more rapidly than total provincial wages and salaries, which grew a modest 1.2% to $48.1 billion. The high technology industries accounted for nearly five per cent of wages and salaries paid out during 1999 in BC.

High tech workers earn more on than other workers in the economy—and the gap is widening.

In the high technology sector, growth in wages and salaries outpaced employment growth, suggesting that individuals were paid more. This is indeed the case: average weekly earnings in the high technology sector in 1999 were $870, up 2.5% from 1998. The average high technology sector worker both earned more and saw a bigger jump in pay during 1999 than the average BC worker. The provincial average pay in BC was $630 per week, up 1.1% from 1998. The difference in the growth rates may be due to the burgeoning demand for skilled high technology workers, as employers are forced to pay more to attract and retain them.

Average high tech earnings are greater than BC average



Establishments: how many high tech businesses are there?

The high tech sector is a dynamic one, with activities in a wide range of industries. Statistics Canada's Business Register is used to count how many establishments are in each industry in the sector, how many employees they have, and where they are located.

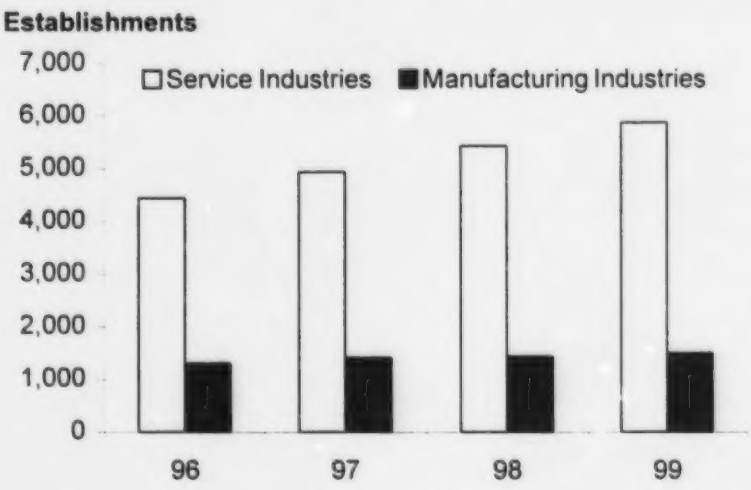
An establishment is the smallest accounting unit within a firm that can report certain financial data. A single company may contain a number of establishments. A branch location does not always signify the existence of an establishment; for example, bank branches are not identified as individual establishments. Furthermore, to be included in the tabulations the establishment must have paid employees; owner-operator firms with no paid employees are not included.

The number of high tech establishments continues to grow

Nearly 60% of all high tech establishments provide computer or engineering services.

In 1999, there were 7,349 establishments in the high technology sector in BC. Eight out of every ten of these were in the service industries of the sector. There were 5,861 high technology service establishments, versus 1,488 in the manufacturing industries. There are more establishments in each of computer services (with 2,297 establishments) and engineering services (1,939 establishments) than in all of the high technology manufacturing industries combined.

Two-thirds of high tech establishments are in the service industries



The number of high technology establishments expanded by 506 in 1999 (+7.4%). Most of the increase came in the high technology service industries; only 66 of the additional establishments were high technology manufacturers.

More than two-fifths (219) of the additional establishments were in the computer service industry; the next fastest growing industry was scientific and technical services, with 128 additional establishments. The number of computer service establishments has more than doubled since 1993 (when there were 1,157). Over this period, the industry has added an average of 190 additional establishments each year. Increases in the number of small firms

(those with between one and four workers) have been an important part of this growth. This supports the notion that a computer services firm can be small (conceivably as small as one person can own and operate such a company) and requires relatively little capital for start-up. On the other hand, the number of large computer services establishments has also grown, more than doubling from 1996 (when there were 37) to the 82 recorded in 1999, suggesting that many of the firms are increasing in size.

Engineering services, in spite of being the second largest industry in the sector, added only 13 new establishments. By contrast, the industry added 40 additional establishments in 1998, and 203 in 1997 (the industry's peak expansion).

High tech manufacturing establishments are bigger

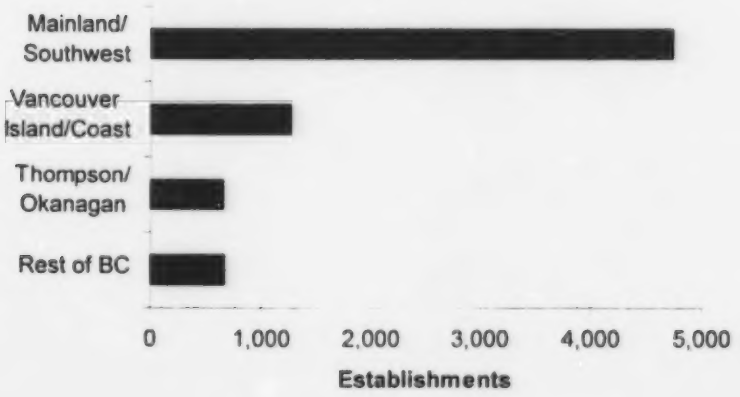
While there were far fewer manufacturing than service establishments in the high technology sector in 1999, they tended to employ a larger number of employees. Just over half of the manufacturing establishments employed less than five workers, while fully two-thirds of the service establishments were of this size. At the other end of the size scale, nearly one of every five high technology manufacturing establishments had 20 or more workers, but only one in ten of the high technology service establishments was this large.

High tech establishments are located where the people are

Most high tech establishments are located in or near Vancouver.

Mirroring the geographic pattern of BC's population, two of every three high technology establishments (4,736) were located in the Mainland/Southwest Development Region. Most of the remainder were found in Vancouver Island/Coast (1,273) and Thompson/Okanagan (665).

Two-thirds of high tech establishments are in the Mainland/Southwest



Growth in the high technology sector has been distributed evenly throughout the province. Not surprisingly, the greatest number of additional establishments appeared in the Mainland/Southwest (+305). But there was also solid growth in Vancouver Island/Coast (+113, all but two of which were in the service industries), including an additional 25 establishments in the Cowichan Valley Regional District—the third largest net increase of any regional district, behind Greater Vancouver (+278) and Capital (+56). And nearly as many additional high technology establishments appeared in the Cariboo Development Region (+30, to 247) as in Thompson/Okanagan (+33, to 665) during 1999.

Self-employment

It is widely recognized that self-employment is an increasingly important factor in the BC economy. There isn't a particularly good measure of self-employment in the high tech sector at this point, but it's possible to arrive at a rough approximation through a tabulation of the number of establishments with no employee payroll. This approximates the number of self-employed with no employees (those with employees will be counted in the number of establishments discussed earlier). 1998 was the first full year that the number of establishments with no payroll was measured, limiting the scope of the historical data.

Note: *care must be used in interpreting these data. It would be erroneous to add these establishment counts to the total number of high technology workers reported elsewhere in this report due to the differences in what they are measuring.*

Self-employment in the high tech sector

Self-employment in the provincial economy has been the subject of some attention in recent years as the number of self-employed British Columbians increases. The number of self-employed has gone from 16% to 21% of the provincial workforce in the years from 1988 to 1999.[5] Some of the high technology industries, particularly computer and engineering services, are ideally suited to self-employment, where the skills, knowledge, and energy of the individual are more important than large capital investment. Labour Force Survey data bears this out; nearly half of all workers in the professional, scientific and technical services are self-employed. (Due to the nature of the data source, this figure includes various high technology workers as well as other professionals such as lawyers, accountants, and architects.)

Self-employment has also grown in the manufacturing industries with an increase in specialized, sophisticated production techniques that provide inputs to other processes. Overall, however, the proportion of self-employed workers in BC's manufacturing industries remains below 10%.

[5] Source: Labour Force Survey, Statistics Canada.

Looking at the establishments in the high technology sector, there were 6,626 establishments that reported no employee payroll in 1999. This was up from 4,733 in 1998. (Note that these figures *can not* be added to the employment estimates presented earlier to arrive at a "total" employment figure for the sector.)

Establishments, 1999

	Zero employees	1+ employees
High technology manufacturing	835	1,488
High technology services	5,791	5,861
computer services	*2,710*	*2,297*
engineering services	*1,738*	*1,939*
scientific and technical services	*1,301*	*1,333*
High technology sector: total	6,626	7,349

Nearly nine out of every ten of the zero employee establishments were in the high technology service industries. In each of the three largest high technology service industries—computer services, engineering services, and scientific and technical services—the number of establishments with zero employees was roughly the same as the number of establishments with payroll employees.

4 Profile and Trends II
International Trade in High Technology Goods and Services

Trade in High Technology Goods

International trade is an important feature of the high technology sector. This fact is reflected in the high volume of two-way trade.

The domestic market for high technology goods does not provide the volume required to achieve the economies of scale needed to remain competitive. Therefore, access to international markets is extremely important as it allows BC producers of high technology goods to focus on market niches.

At the same time, BC manufacturers do not produce enough of some types of high technology equipment to satisfy the domestic demand. As a result, large volumes of goods are imported into the province. It is interesting to note that a major consumer of high technology imports is the high technology sector itself.

High technology goods referred to in this section are based on a list developed by the U.S. Bureau of the Census and modified by Statistics Canada to fit Canadian conditions. For more information, please see Appendix B "Defining High Technology Commodities."

The export of high technology goods continue to grow

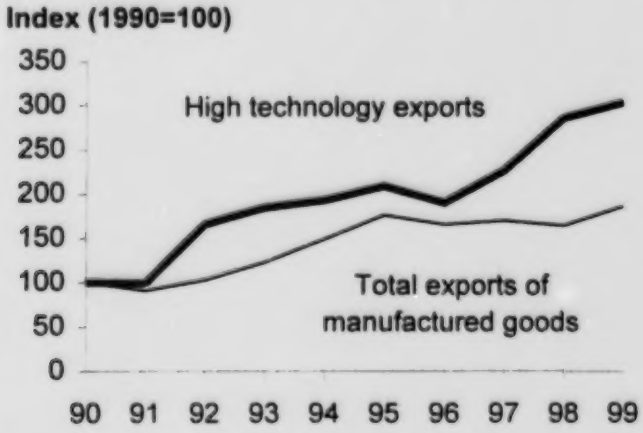
Exports of high tech commodities have been climbing for three straight years.

During 1999, the value of high technology commodities exported from BC rose 6.0% to $816.4 million. High technology commodities accounted for just under three per cent of total BC exports. In 1999 BC exports of all commodities jumped 10.2% to $28.7 billion. Of total BC exports, $24.6 billion was in processed goods (that is, the outputs from manufacturing industries, as opposed to unprocessed natural resources), a 13.2% increase from 1998.

Despite the fact that 1999 saw high technology exports grow more slowly than total manufactured exports, over the long term high technology exports have outpaced total exports. Between 1990 and 1999, the export of high technology commodities has grown at an annual average rate[1] of 13.1%, nearly twice the pace of total manufactured commodities (+7.1%). This rate of expansion meant that during the 1990s, the value of high technology exports from BC tripled.

[1] Compound rate.

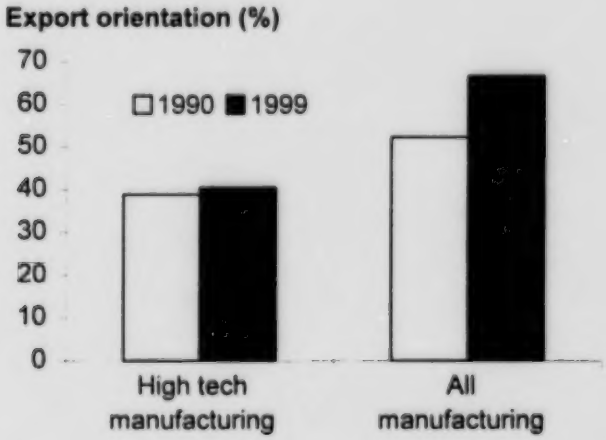
High technology goods export growth outpaces total goods exports



Manufacturers of high tech commodities don't export as much of their outputs as other BC manufacturers.

It is interesting to note that in the high technology industries, shipments[2] have grown at roughly the same pace as exports, indicating that roughly 40% of the value of total shipments is exported. Across all manufacturing industries in BC, however, the growth in the value of exports has significantly outpaced shipments, and exports have become increasingly important. Exports accounted for roughly half of the value of BC's manufacturing shipments at the start of the decade, but had climbed to 67% by 1999.

Export orientation remaining steady for high tech industries while growing for total BC manufacturing exports



[2] A term used interchangeably with "revenue" elsewhere in this report.

In spite of big drop, computers and telecommunications remain BC's biggest high tech exports

Computers and telecommunications equipment remained the largest group of high technology export commodities[3], but 1999 saw their share of the total severely eroded. In 1998, computers and telecommunications accounted for 39% of the value of BC's high technology exports; in 1999, the share shrank to 28%. This decline in importance was caused by two opposite trends: the value of these commodities fell by roughly one-quarter (to $230 million), while at the same time material design goods, opto-electronics, and life sciences commodities all posted impressive gains.

BC high technology exports by commodity group—1999

	$ million	% change
Computers and Telecommunications	229.9	-23.9
Aerospace	129.1	24.0
Computer Integrated Manufacturing	116.3	-1.3
Material Design	94.0	63.0
Opto-Electronics	90.7	77.6
Electronics	77.8	5.0
Life Sciences	73.8	29.4
Weapons and Nuclear	2.6	-41.1
Biotechnology	2.3	15.0
Total	**816.4**	**6.0**

The value of aerospace exports also increased (+24.0% to $129.1 million), moving to the second rank as computer integrated manufacturing fell 1.3% to $116.3 million.

Most high tech exports bound for USA

During 1999, BC manufacturers of high technology commodities exported $680.5 million of their products to the United States, accounting for 83% of the total value of high technology exports. The next most important destination for BC produced high technology commodities was Taiwan, with only 2.9% of the total value ($23.9 million).

Every two weeks during 1999, BC exported more high technology goods to the US than were sent to Taiwan—the next most important destination for high tech exports—all year.

In 1999, growth in exports of high technology commodities to the US offset declines in exports to the rest of the world. Exports to the US were up 10.7%, a net gain of $65.7 million, while exports to the rest of the world were off 12.5%, a drop of $19.4 million. The continued depreciation of Canada's dollar relative to US currency is one factor that makes BC's products attractive to American customers. The fact that the US, BC's biggest trading partner in all commodities, is currently experiencing the longest run of peace-time economic expansion in history also helps to explain the growth in BC's high technology exports to that country.

[3] For information on high technology commodity groups, see Appendix B.

BC high technology exports by destination—1999

	$ million	% change
USA	680.5	10.7
Pacific Rim	69.9	-29.7
European Union	37.5	2.9
Rest of the world	28.6	47.0
Total	**816.4**	**6.0**

Exports to the Pacific Rim were off for the second straight year, dropping 29.7% to $69.9 million. This regional statistic hides the fact that exports to some countries were up substantially, while others fell. Exports to Taiwan continued to grow, gaining 36.3% over 1998, marking the fifth straight year that exports to Taiwan have increased. Exports to Japan and Australia were also up, but these gains were not enough to offset the decline in exports to other destinations in the region like Hong Kong and the People's Republic of China. The continued economic slump in Asia explains at least part of the downturn in exports to the region, although it is also conceivable that consumers in the region are finding alternative sources of the commodities—or that BC exporters have found more lucrative markets elsewhere (such as the US).

Exports to the European Union from BC in 1999 were up 2.9% in 1999 to $37.5 million in spite of declines in exports to Germany (-22.5%) and Netherlands (-32.9%). Exports to the United Kingdom (+42.7%) and France (+28.3%) were up during 1999, both regaining ground lost in 1998.

Mode of transport

Land and air are the two most popular modes of transport for BC's high technology exports, but the destination of the exports plays a significant role in determining how the goods are shipped. Land transport (rail or truck) accounts for over half (57%) of the total, although virtually all of these exports are bound for the US[4]. Two-thirds of US exports travel by land, and almost all of the remainder are shipped by air.

[4] The apparently implausible shipments of products by land to overseas destinations is explained by the fact that the goods may leave BC by either truck or rail to points of departure in the United States where they are loaded onto ships or planes for the remainder of their journey.

BC high technology exports by region and mode of transport—1999

Region	Mode of transport	$ millions	% of total high tech exports
United States	Land	453.3	55.5%
	Sea	5.6	0.7%
	Air	221.5	27.1%
	Total	*680.5*	*83.3%*
All other countries	Land	11.4	1.4%
	Sea	18.4	2.3%
	Air	106.1	13.0%
	Total	*135.9*	*16.7%*
Total	Land	464.7	56.9%
	Sea	24.0	2.9%
	Air	327.7	40.1%
	Total	*816.4*	*100.0%*

Air cargo is by a large margin the most frequent mode of transport to other countries, accounting for nearly 80% of the total exports. Another 14% are shipped by sea, and 8% by land.

High technology imports grow, too

There is a consistently strong demand within Canada for BC-made high technology commodities: over half of BC's production of high technology commodities doesn't get exported outside the country. This domestic demand is also satiated through the importation of those same commodities. In 1999, BC industries used $3.0 billion dollars worth of high technology commodities that were imported to BC—four times the value of the same commodities that were exported from BC.

While the value of BC exports of computer and telecommunication goods fell in 1999, the value of imports were up 13.9% to $949.6 million, making it the largest import group of high technology commodities. Aerospace imports ranked second, at $778.5 million (up 22.3% from 1998).

BC high technology imports by commodity group—1999

	$ million	% change
Computers and Telecommunications	949.6	13.9
Aerospace	778.5	22.3
Life Sciences	392.8	20.8
Computer Integrated Manufacturing	380.9	8.63
Electronics	263.3	18.4
Opto-Electronics	99.2	11.5
Material Design	74.0	67.3
Weapons and Nuclear	55.5	-1.3
Biotechnology	45.6	7.9
Total	**3,039.3**	**16.9**

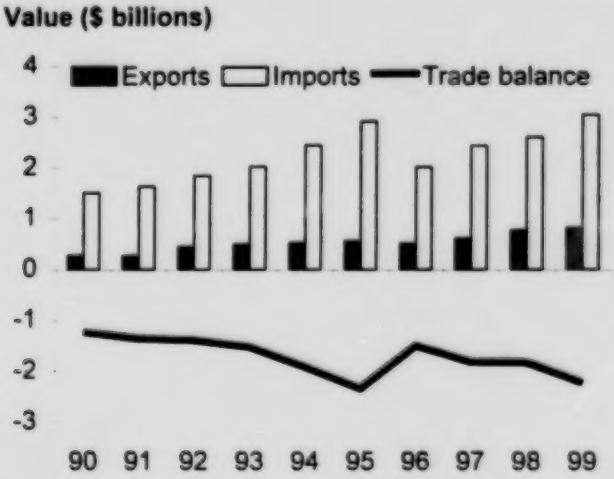
The value of high technology imports has doubled since 1990, when it stood at $1.5 billion. More than half of the increase is accounted for by an expansion of imports of aerospace (a net increase of $508.0 million) and computer and telecommunications commodities ($306.3 million).

The balance of trade

The value of high tech imports overwhelms the value of exports—BC runs a deficit in the trade of these commodities.

BC's import of high technology commodities far exceeds the value of exports; as a result, the province runs a trade deficit in these commodities. And despite the fact that growth in high technology exports from BC has outpaced imports, the magnitude of imports means that over the long term the province's balance of trade deficit in high technology commodities has steadily grown.

High technology trade deficit continues to grow



In 1999, the trade deficit in high technology commodities grew to $2.2 billion, an increase of 21.5%. This is approximately $1 billion higher than the deficit recorded in 1990.

BC has a bigger deficit in high tech trade with European Union nations ($509 million) than with Pacific Rim countries ($352 million).

Roughly half of BC's trade deficit in high technology commodities is with the US; in 1999, it climbed by roughly $100 million to $1.2 billion. The trade deficit with Pacific Rim countries was $351.6 million (up 44.6%), nearly half of which was with Japan ($166.4 million). Because imports far exceed exports, BC's trade deficit with the European Union was $508.9 million (up 28.0% from 1998).

The only commodity group that enjoys a trade surplus is material design. This commodity category includes the most technologically advanced of an already-advanced sector, such as superconductors, advanced polymers, and improved fibre optic components. That BC exports more of these leading-edge commodities than are imported supports the contention that BC's research and development activities are a vital part of the manufacturing activities in the province.

BC balance of trade in high technology goods by commodity group—1999

	$ millions
Computers and Telecommunications	-719.8
Computer Integrated Manufacturing	-264.6
Aerospace	-649.4
Electronics	-185.5
Material Design	20.0
Life Sciences	-319.0
Opto-Electronics	-8.4
Weapons and Nuclear	-52.9
Biotechnology	-43.3
Total	**-2,222.9**

Export of high technology services

Service exports are usually not as easy to measure as exports of goods. Some service exports take place when BC-based professionals, such as engineers or software programmers work for a period of time outside the province. Service exports also occur when, for example, an engineering firm produces a study in its BC office for an overseas client or when a software developer creates a new program which is "shipped" on-line to a client in another country.

Why are they important?

Over the last couple of decades, world-wide trade in services has increased significantly as technical innovations have widened the scope of the service sector and advances in transportation and communications have decreased the distance between countries in an economic sense. The proliferation of email, the Internet, and other forms of information technology has made it easier to conduct business with clients from around the world. Moreover, decreases in the cost of travel, and an increased number of overseas offices have made it more economical—and practical—for companies to send employees overseas to conduct business.

The analysis presented here is for 1997, the most recent year for which data are available.

Service exports continue to grow

The high technology sector is comprised of manufacturing and service industries. While all of the manufacturing industries export goods, only two of the four service industries derive a significant part of their revenues from exports. In 1997, exports of services from computer and related services and engineering services amounted to $615 million, surpassing the value of the export of high technology goods for the first time. Exports of high technology services have become an increasingly important part of the sector's revenue; in 1991[5], service exports were $91 million—one-third as much as goods exports.

1997 marked the first year that BC's high tech service industries earned more export revenue than the manufacturing industries in the sector.

[5] The first year for which service export data is available.

BC high technology service exports—1997

	Revenues	Exports	
	$ million	$ million	% change
Computer services	1,578	241	15.9
Engineering services	1,530	374	115.3
Total	**3,108**	**615**	**61.1**

1997 was a boom year for exports of engineering services, as they more than doubled from 1996. Exports accounted for nearly one-third of the industry's revenue in 1997, up from only 6% in 1991.

Growth in computer services exports hasn't been as dramatic, but still impressive. In 1991 the industry earned just over 5% of its revenue from exports, and by 1997 this had increased to 15%.

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Detailed Table 1. Gross Domestic Product (GDP) (Constant Dollar) at Factor Cost[1] by Industry, 1989-1998

		Constant dollars (1992 $ million)									
SIC	**INDUSTRY**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Manufacturing Industries		**305.3**	**283.9**	**260.6**	**340.3**	**312.5**	**355.6**	**391.6**	**510.3**	**539.8**	**648.3**
3192	Construction and Mining Machinery	17.2	14.9	14.1	12.5	12.3	15.7	20.0	*	*	*
321	Aircraft and Aircraft Parts Industry	41.9	59.6	49.5	50.1	36.4	44.6	51.2	76.0	58.8	71.1
3359	Other Communication and Electrical Equipment	62.1	51.9	46.4	50.9	38.4	37.1	44.3	112.2	115.8	120.6
3361	Electronic Computing and Peripheral Equipment	*	*	*	*	48.1	61.7	73.1	50.5	88.7	117.9
337grp[2]	Electrical Industrial Equipment Group	46.6	44.7	28.0	43.1	37.6	36.2	37.4	31.5	33.6	35.0
3711	Industrial Inorganic Chemicals	11.3	7.0	7.6	7.6	9.7	10.4	9.8	*	*	*
3911	Indicating, Recording & Controlling Instruments	8.0	8.4	5.6	12.1	16.6	16.0	21.7	28.4	34.2	44.3
	Other High Technology Manufacturing	*	*	*	*	113.4	133.9	134.1	186.9	183.8	235.6
Service Industries		**1,274.2**	**1,413.2**	**1,414.2**	**1,391.7**	**1,545.4**	**1,642.4**	**1,848.7**	**1,856.1**	**1,942.7**	**1,988.2**
772	Computer And Related Services	251.7	318.7	391.8	418.4	554.7	571.3	760.2	689.6	753.9	815.4
7752[3]	Engineering Services	725.3	781.1	690.5	639.5	642.8	650.4	671.0	615.2	784.3	773.6
7759[3]	Scientific and Technical Services	228.7	253.0	266.4	266.1	282.0	352.6	342.0	465.2	323.3	316.6
868	Medical and other Health Laboratories	68.4	60.3	65.6	67.7	65.9	68.0	75.5	86.0	81.2	82.5
High Technology Sector Total		**1,579.5**	**1,697.1**	**1,674.8**	**1,732.0**	**1,857.8**	**1,997.9**	**2,240.3**	**2,366.3**	**2,482.5**	**2,636.5**
BC Industrial Aggregate		**71,026.8**	**72,235.6**	**73,153.8**	**75,332.3**	**78,953.2**	**82,628.1**	**84,863.4**	**86,546.5**	**88,727.4**	**88,950.7**
High Technology as % of Total		**2.2%**	**2.3%**	**2.3%**	**2.3%**	**2.4%**	**2.4%**	**2.6%**	**2.7%**	**2.8%**	**3.0%**

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. GDP values for SICs 3372 and 3379 were not available separately, so the two industries are presented as a group in this table.
3. GDP data are not available at the four-digit level for SICs 7752 and 7759. A ratio was applied to the GDP values for SIC 775 in order to remove SIC 7751, Offices of Architects, and obtain an estimate of the GDP of SICs 7752 (Engineers) and 7759 (Other Scientific and Technical Services).

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 1 (ctd). Gross Domestic Product (GDP) (Constant Dollar) at Factor Cost[1] by Industry, 1989-1998

		% change from previous year								
SIC	**INDUSTRY**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Manufacturing Industries		**-7.0**	**-8.2**	**30.6**	**-8.2**	**13.8**	**10.1**	**30.3**	**5.8**	**20.1**
3192	Construction and Mining Machinery	-13.2	-5.6	-11.4	-1.5	27.4	27.3	*	*	*
3211	Aircraft and Aircraft Parts Industry	42.0	-16.9	1.1	-27.3	22.5	14.8	48.5	-22.7	21.1
3359	Other Communication and Electrical Equipment	-16.4	-10.6	9.6	-24.6	-3.2	19.3	153.3	3.2	4.2
3361	Electronic Computing and Peripheral Equipment	*	*	*	*	28.3	18.5	-30.9	75.6	32.9
337grp[2]	Electrical Industrial Equipment Group	-4.1	-37.4	53.8	-12.8	-3.6	3.2	-15.6	6.4	4.1
3711	Industrial Inorganic Chemicals	-38.6	8.6	-0.1	28.9	6.3	-5.2	*	*	*
3911	Indicating, Recording & Controlling Instruments	5.4	-33.1	114.7	37.2	-3.7	36.1	31.0	20.3	29.5
	Other High Technology Manufacturing	*	*	*	*	18.1	0.2	39.4	-1.7	28.2
Service Industries		**10.9**	**0.1**	**-1.6**	**11.0**	**6.3**	**12.6**	**0.4**	**4.7**	**2.3**
772	Computer And Related Services	26.6	22.9	6.8	32.6	3.0	33.1	-9.3	9.3	8.2
7752[3]	Engineering Services	7.7	-11.6	-7.4	0.5	1.2	3.2	-8.3	27.5	-1.4
7759[3]	Scientific and Technical Services	10.6	5.3	-0.1	6.0	25.0	-3.0	36.0	-30.5	-2.1
868	Medical and other Health Laboratories	-11.8	8.6	3.3	-2.7	3.2	10.9	14.0	-5.6	1.7
High Technology Sector Total		**7.4**	**-1.3**	**3.4**	**7.3**	**7.5**	**12.1**	**5.6**	**4.9**	**6.2**
BC Industrial Aggregate		**1.7**	**1.3**	**3.0**	**4.8**	**4.7**	**2.7**	**2.0**	**2.5**	**0.3**

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. GDP values for SICs 3372 and 3379 were not available separately, so the two industries are presented as a group in this table.
3. GDP data are not available at the four-digit level for SICs 7752 and 7759. A ratio was applied to the GDP values for SIC 775 in order to remove SIC 7751, Offices of Architects, and obtain an estimate of the GDP of SICs 7752 (Engineers) and 7759 (Other Scientific and Technical Services).

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 2. Gross Domestic Product (GDP) (Current Dollar) at Factor Cost[1] by Industry, 1989-1998

		Current dollars ($ million)									
SIC	**INDUSTRY**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Manufacturing Industries		**276.9**	**283.0**	**257.5**	**340.3**	**338.5**	**368.4**	**506.8**	**621.3**	**652.5**	**789.6**
3192	Construction and Mining Machinery	14.4	14.2	13.2	12.5	12.1	15.0	19.6	*	*	*
3211	Aircraft and Aircraft Parts Industry	32.3	49.5	41.9	50.1	33.4	51.8	66.0	95.0	75.8	99.7
3359	Other Communication and Electrical Equipment	67.5	61.0	51.1	50.9	40.3	38.7	48.7	125.0	119.0	116.9
3361	Electronic Computing and Peripheral Equipment	*	*	*	*	65.8	63.1	164.5	83.9	138.7	186.0
337grp[2]	Electrical Industrial Equipment Group	33.6	37.6	27.6	43.1	41.1	38.5	41.4	47.8	50.5	52.8
3711	Industrial Inorganic Chemicals	12.1	3.2	8.7	7.6	12.6	13.0	16.5	*	*	*
3911	Indicating, Recording & Controlling Instruments	6.4	8.0	5.9	12.1	16.5	16.5	23.3	33.3	40.6	54.7
	Other High Technology Manufacturing	*	*	*	*	116.7	131.8	126.9	205.6	196.8	249.9
Service Industries		**1,162.5**	**1,327.0**	**1,375.5**	**1,391.7**	**1,528.6**	**1,596.1**	**1,809.8**	**1,731.2**	**1,867.2**	**1,887.7**
772	Computer And Related Services	268.9	324.0	389.2	418.4	519.8	489.6	674.4	630.6	735.3	794.4
7752[3]	Engineering Services	637.5	716.9	666.8	639.5	653.9	672.4	699.3	574.6	740.0	711.8
7759[3]	Scientific and Technical Services	201.1	232.2	257.3	266.1	286.8	364.5	356.5	434.4	305.0	291.3
868	Medical and other Health Laboratories	55.1	54.0	62.1	67.7	68.1	69.4	79.6	91.6	86.9	90.3
High Technology Sector Total		**1,439.5**	**1,610.0**	**1,633.0**	**1,732.0**	**1,867.1**	**1,964.4**	**2,316.6**	**2,352.5**	**2,519.7**	**2,677.3**
BC Industrial Aggregate		**66,305.4**	**69,046.8**	**71,768.3**	**75,332.3**	**81,073.6**	**87,639.4**	**91,779.0**	**93,977.4**	**96,391.4**	**96,216.4**
High Technology as % of Total		**2.2%**	**2.3%**	**2.3%**	**2.3%**	**2.3%**	**2.2%**	**2.5%**	**2.5%**	**2.6%**	**2.8%**

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. GDP values for SICs 3372 and 3379 were not available separately, so the two industries are presented as a group in this table.
3. GDP data are not available at the four-digit level for SICs 7752 and 7759. A ratio was applied to the GDP values for SIC 775 in order to remove SIC 7751, Offices of Architects, and obtain an estimate of the GDP of SICs 7752 (Engineers) and 7759 (Other Scientific and Technical Services).

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 2 (ctd). Gross Domestic Product (GDP) (Current Dollar) at Factor Cost[1] by Industry, 1989-1998

		% change from previous year								
SIC	**INDUSTRY**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Manufacturing Industries		**2.2**	**-9.0**	**32.1**	**-0.5**	**8.8**	**37.6**	**22.6**	**5.0**	**21.0**
3192	Construction and Mining Machinery	-1.3	-7.3	-5.3	-2.8	23.9	30.4	*	*	*
3211	Aircraft and Aircraft Parts Industry	53.4	-15.4	19.5	-33.3	55.2	27.3	44.0	-20.2	31.5
3359	Other Communication and Electrical Equipment	-9.7	-16.1	-0.5	-20.7	-4.0	25.7	156.8	-4.8	-1.8
3361	Electronic Computing and Peripheral Equipment	*	*	*	*	-4.2	160.9	-49.0	65.3	34.1
337grp[2]	Electrical Industrial Equipment Group	12.0	-26.6	56.0	-4.6	-6.3	7.6	15.6	5.7	4.4
3711	Industrial Inorganic Chemicals	-32.7	6.3	-13.0	66.9	2.8	27.3	*	*	*
3911	Indicating, Recording & Controlling Instruments	24.4	-26.6	105.9	36.6	-0.1	41.6	42.6	21.9	34.6
	Other High Technology Manufacturing	*	*	*	*	13.0	-3.8	62.1	-4.3	27.0
Service Industries		**14.1**	**3.7**	**1.2**	**9.8**	**4.4**	**13.4**	**-4.3**	**7.9**	**1.1**
772	Computer And Related Services	20.5	20.1	7.5	24.2	-5.8	37.7	-6.5	16.6	8.0
7752[3]	Engineering Services	12.4	-7.0	-4.1	2.3	2.8	4.0	-17.8	28.8	-3.8
7759[3]	Scientific and Technical Services	15.5	10.8	3.4	7.8	27.1	-2.2	21.9	-29.8	-4.5
868	Medical and other Health Laboratories	-2.0	15.1	9.1	0.5	2.0	14.7	15.0	-5.2	4.0
High Technology Sector Total		**11.8**	**1.4**	**6.1**	**7.8**	**5.2**	**17.9**	**1.5**	**7.1**	**6.3**
BC Industrial Aggregate		**4.1**	**3.9**	**5.0**	**7.6**	**8.1**	**4.7**	**2.4**	**2.6**	**-0.2**

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. GDP values for SICs 3372 and 3379 were not available separately, so the two industries are presented as a group in this table.
3. GDP data are not available at the four-digit level for SICs 7752 and 7759. A ratio was applied to the GDP values for SIC 775 in order to remove SIC 7751, Offices of Architects, and obtain an estimate of the GDP of SICs 7752 (Engineers) and 7759 (Other Scientific and Technical Services).

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 3. Gross Domestic Product (GDP) (Constant Dollar) at Factor Cost[1], Selected Activities, 1989-1998

	Constant (1992 $ million)									
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Goods-Producing Industries[2]	**22,053**	**21,522**	**21,029**	**20,992**	**21,762**	**22,331**	**22,584**	**22,433**	**22,905**	**22,337**
Agriculture and Related	1,622	1,639	1,589	1,821	1,789	1,646	1,749	1,811	1,892	1,909
Fishing, Trapping and Related	580	618	523	484	629	551	410	386	392	311
Forestry and Related	6,231	5,625	5,027	5,233	5,718	5,672	5,563	5,091	4,888	4,632
Mining and Related	3,115	3,096	3,355	3,012	3,156	3,330	3,571	*	*	*
Other Manufacturing	2,656	2,442	2,283	2,297	2,369	2,596	2,794	*	*	*
Construction	5,591	5,785	5,832	5,877	5,950	6,366	6,264	6,103	6,522	5,976
Utilities	2,123	2,255	2,320	2,267	2,153	2,170	2,234	2,427	2,346	2,280
Service-Producing Industries[2]	**48,817**	**50,616**	**52,080**	**54,341**	**57,191**	**60,298**	**62,279**	**64,113**	**65,822**	**66,614**
Transportation and Storage	4,496	4,430	4,217	4,476	4,706	5,144	5,330	5,418	5,522	5,467
Communication	2,087	2,165	2,273	2,242	2,420	2,537	2,572	2,639	2,725	2,918
Wholesale Trade	3,372	3,448	3,597	3,951	4,136	4,465	4,215	4,434	4,650	4,716
Retail Trade	4,848	4,788	4,595	4,834	5,182	5,376	5,700	5,945	6,183	6,092
Finance, Insurance and Real Estate	5,958	6,192	6,802	7,206	7,534	8,034	8,118	8,337	8,718	8,738
Owner-occupied Dwellings	5,764	6,262	6,761	7,083	7,552	7,938	8,298	8,629	8,941	9,223
Business Services	3,380	3,611	3,652	3,622	4,018	4,221	4,566	4,582	4,803	4,950
Education	4,036	4,172	4,285	4,375	4,562	4,690	5,096	5,496	5,565	5,572
Health and Social Services	5,042	5,289	5,540	5,712	5,715	6,023	6,164	6,262	6,298	6,430
Accommodation, Food & Beverages	2,599	2,826	2,588	2,734	2,927	3,131	3,275	3,318	3,417	3,535
Other services	2,980	3,059	3,184	3,293	3,485	3,717	3,897	4,014	4,017	3,990
Government Services	4,265	4,439	4,648	4,812	4,954	5,022	5,049	5,038	4,984	4,983
All Industries	**71,027**	**72,236**	**73,154**	**75,332**	**78,953**	**82,628**	**84,863**	**86,546**	**88,727**	**88,951**
High technology sector[3]	**1,579.5**	**1,697.1**	**1,674.8**	**1,732.0**	**1,857.8**	**1,997.9**	**2,240.3**	**2,366.3**	**2,482.5**	**2,636.5**
Tourism sector[3]	**n/a**									

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. These industries are not mutually exclusive. High Technology and Tourism sector totals are calculated as sub-components of other industries. As well, some of the labels in this table represent larger industry aggregations than others. For instance, there are 13 four-digit SICs in the Mining category, 21 four-digit SICs in Food Industries and 47 four-digit SICs in Finance, Insurance and Real Estate.
3. Tourism GDP is not available at the time this report goes to press. It is anticipated that it will be published in late June 2000.

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 3 (ctd). Gross Domestic Product (GDP) (Constant Dollar) at Factor Cost[1], Selected Activities, 1989-1998

	% change from previous year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Goods-Producing Industries[2]	**-2.4**	**-2.3**	**-0.2**	**3.7**	**2.6**	**1.1**	**-0.7**	**2.1**	**-2.5**
Agriculture and Related	1.1	-3.1	14.6	-1.8	-8.0	6.3	3.5	4.5	0.9
Fishing, Trapping and Related	6.4	-15.3	-7.4	29.8	-12.4	-25.6	-5.8	1.7	-20.8
Forestry and Related	-9.7	-10.6	4.1	9.3	-0.8	-1.9	-8.5	-4.0	-5.2
Mining and Related	-0.6	8.4	-10.2	4.7	5.5	7.2	*	*	*
Other Manufacturing	-8.1	-6.5	0.6	3.1	9.6	7.6	*	*	*
Construction	3.5	0.8	0.8	1.2	7.0	-1.6	-2.6	6.9	-8.4
Utilities	6.2	2.9	-2.3	-5.0	0.8	2.9	8.6	-3.3	-2.8
Service-Producing Industries[2]	**3.7**	**2.9**	**4.3**	**5.2**	**5.4**	**3.3**	**2.9**	**2.7**	**1.2**
Transportation and Storage	-1.5	-4.8	6.2	5.1	9.3	3.6	1.7	1.9	-1.0
Communication	3.7	5.0	-1.3	7.9	4.8	1.4	2.6	3.3	7.1
Wholesale Trade	2.3	4.3	9.8	4.7	8.0	-5.6	5.2	4.9	1.4
Retail Trade	-1.2	-4.0	5.2	7.2	3.8	6.0	4.3	4.0	-1.5
Finance, Insurance and Real Estate	3.9	9.8	5.9	4.6	6.6	1.0	2.7	4.6	0.2
Owner-occupied Dwellings	8.6	8.0	4.8	6.6	5.1	4.5	4.0	3.6	3.2
Business Services	6.8	1.1	-0.8	10.9	5.0	8.2	0.4	4.8	3.1
Education	3.4	2.7	2.1	4.3	2.8	8.7	7.8	1.2	0.1
Health and Social Services	4.9	4.8	3.1	0.1	5.4	2.4	1.6	0.6	2.1
Accommodation, Food & Beverages	8.7	-8.4	5.6	7.1	7.0	4.6	1.3	3.0	3.4
Other services	2.7	4.1	3.4	5.8	6.7	4.8	3.0	0.1	-0.7
Government Services	4.1	4.7	3.5	2.9	1.4	0.5	-0.2	-1.1	0.0
All Industries	**1.7**	**1.3**	**3.0**	**4.8**	**4.7**	**2.7**	**2.0**	**2.5**	**0.3**
High technology sector[3]	**7.4**	**-1.3**	**3.4**	**7.3**	**7.5**	**12.1**	**5.6**	**4.9**	**6.2**
Tourism sector[3]	**n/a**								

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. These industries are not mutually exclusive. High Technology and Tourism sector totals are calculated as sub-components of other industries. As well, some of the labels in this table represent larger industry aggregations than others. For instance, there are 13 four-digit SICs in the Mining category, 21 four-digit SICs in Food Industries and 47 four-digit SICs in Finance, Insurance and Real Estate.
3. Tourism GDP is not available at the time this report goes to press. It is anticipated that it will be published in late June 2000.

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 4. Gross Domestic Product (GDP) (Current Dollar) at Factor Cost[1], Selected Activities, 1989-1998

	Current ($ million)									
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**
Goods-Producing Industries[2]	**21,907**	**21,221**	**20,506**	**20,992**	**23,243**	**26,116**	**27,507**	**27,040**	**27,363**	**25,928**
Agriculture and Related	1,466	1,566	1,624	1,821	1,819	1,715	1,713	1,868	2,015	2,071
Fishing, Trapping and Related	549	577	532	484	582	794	726	604	558	476
Forestry and Related	6,961	5,780	4,656	5,233	7,031	8,462	9,172	8,406	7,952	6,790
Mining and Related	3,655	3,640	3,875	3,012	3,259	3,953	4,254	*	*	*
Other Manufacturing	2,366	2,311	2,216	2,297	2,442	2,690	3,138	*	*	*
Construction	5,062	5,385	5,428	5,877	6,082	6,408	6,251	6,105	6,351	5,863
Utilities	1,850	1,963	2,174	2,267	2,028	2,094	2,253	2,528	2,423	2,430
Service-Producing Industries[2]	**44,398**	**47,826**	**51,262**	**54,341**	**57,831**	**61,524**	**64,272**	**66,937**	**69,572**	**71,374**
Transportation and Storage	4,369	4,219	4,391	4,476	4,670	5,193	5,495	5,385	5,603	5,780
Communication	2,032	2,086	2,219	2,242	2,481	2,590	2,656	2,777	2,950	3,208
Wholesale Trade	3,601	3,730	3,806	3,951	4,198	4,546	4,522	4,882	5,248	5,028
Retail Trade	4,414	4,734	4,747	4,834	5,149	5,264	5,522	5,991	6,345	6,257
Finance, Insurance and Real Estate	5,708	5,921	6,752	7,206	7,679	7,945	7,943	8,466	8,954	9,231
Owner-occupied Dwellings	5,362	6,008	6,608	7,083	7,632	8,184	8,746	8,980	9,192	9,579
Business Services	3,020	3,377	3,485	3,622	4,080	4,319	4,736	4,872	5,278	5,643
Education	3,124	3,559	3,991	4,375	4,571	4,879	5,086	5,139	5,144	5,226
Health and Social Services	4,194	4,709	5,195	5,712	5,997	6,415	6,651	6,972	7,112	7,386
Accommodation, Food & Beverages	2,242	2,522	2,513	2,734	2,931	3,140	3,383	3,603	3,845	4,093
Other services	2,584	2,790	3,113	3,293	3,463	3,805	4,103	4,367	4,453	4,515
Government Services	3,749	4,172	4,443	4,812	4,980	5,244	5,431	5,504	5,447	5,428
All Industries	**66,305**	**69,047**	**71,768**	**75,332**	**81,074**	**87,639**	**91,779**	**93,977**	**96,935**	**97,302**
High technology sector[3]	**1,439.5**	**1,610.0**	**1,633.0**	**1,732.0**	**1,867.1**	**1,964.4**	**2,316.6**	**2,352.5**	**2,519.7**	**2,677.3**
Tourism sector[3]	**n/a**									

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. These industries are not mutually exclusive. High Technology and Tourism sector totals are calculated as sub-components of other industries. As well, some of the labels in this table represent larger industry aggregations than others. For instance, there are 13 four-digit SICs in the Mining category, 21 four-digit SICs in Food Industries and 47 four-digit SICs in Finance, Insurance and Real Estate.
3. Tourism GDP is not available at the time this report goes to press. It is anticipated that it will be published in late June 2000.

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 4 (ctd). Gross Domestic Product (GDP) (Current Dollar) at Factor Cost[1], Selected Activities, 1989-1998

	% change from previous year								
	1990	1991	1992	1993	1994	1995	1996	1997	1998
Goods-Producing Industries[2]	**-3.1**	**-3.4**	**2.4**	**10.7**	**12.4**	**5.3**	**-1.7**	**1.2**	**-5.2**
Agriculture and Related	6.8	3.7	12.2	-0.1	-5.7	-0.1	9.0	7.9	2.8
Fishing, Trapping and Related	5.1	-7.7	-9.1	20.2	36.4	-8.6	-16.8	-7.5	-14.7
Forestry and Related	-17.0	-19.4	12.4	34.4	20.4	8.4	-8.4	-5.4	-14.6
Mining and Related	-0.4	6.5	-22.3	8.2	21.3	7.6	*	*	*
Other Manufacturing	-2.3	-4.1	3.6	6.3	10.2	16.6	*	*	*
Construction	6.4	0.8	8.3	3.5	5.3	-2.4	-2.3	4.0	-7.7
Utilities	6.1	10.8	4.3	-10.5	3.3	7.6	12.2	-4.2	0.3
Service-Producing Industries[2]	**7.7**	**7.2**	**6.0**	**6.4**	**6.4**	**4.5**	**4.1**	**3.9**	**2.6**
Transportation and Storage	-3.4	4.1	1.9	4.3	11.2	5.8	-2.0	4.0	3.2
Communication	2.6	6.4	1.1	10.6	4.4	2.5	4.6	6.3	8.7
Wholesale Trade	3.6	2.0	3.8	6.2	8.3	-0.5	8.0	7.5	-4.2
Retail Trade	7.3	0.3	1.8	6.5	2.2	4.9	8.5	5.9	-1.4
Finance, Insurance and Real Estate	3.7	14.0	6.7	6.6	3.5	0.0	6.6	5.8	3.1
Owner-occupied Dwellings	12.0	10.0	7.2	7.7	7.2	6.9	2.7	2.4	4.2
Business Services	11.8	3.2	3.9	12.6	5.9	9.7	2.9	8.3	6.9
Education	13.9	12.1	9.6	4.5	6.7	4.2	1.0	0.1	1.6
Health and Social Services	12.3	10.3	10.0	5.0	7.0	3.7	4.8	2.0	3.9
Accommodation, Food & Beverages	12.5	-0.4	8.8	7.2	7.1	7.7	6.5	6.7	6.5
Other services	7.9	11.6	5.8	5.2	9.9	7.8	6.4	2.0	1.4
Government Services	11.3	6.5	8.3	3.5	5.3	3.6	1.3	-1.0	-0.3
All Industries	**4.1**	**3.9**	**5.0**	**7.6**	**8.1**	**4.7**	**2.4**	**3.1**	**0.4**
High technology sector[2]	**11.8**	**1.4**	**6.1**	**7.8**	**5.2**	**17.9**	**1.5**	**7.1**	**6.3**
Tourism sector[3]	**n/a**								

1. GDP at factor cost is defined as the unduplicated value of output from the factors of production (labour and capital). It is calculated by subtracting the cost of intermediate commodity and service inputs as well as net indirect taxes from the gross output of each industry.
2. These industries are not mutually exclusive. High Technology and Tourism sector totals are calculated as sub-components of other industries. As well, some of the labels in this table represent larger industry aggregations than others. For instance, there are 13 four-digit SICs in the Mining category, 21 four-digit SICs in Food Industries and 47 four-digit SICs in Finance, Insurance and Real Estate.
3. Tourism GDP is not available at the time this report goes to press. It is anticipated that it will be published in late June 2000.

* Data has been suppressed by Statistics Canada for confidentiality reasons.

Source: BC STATS and Statistics Canada

Detailed Table 5. High Technology Sector Revenues, 1989-1998

SIC	INDUSTRY	Value ($ million) 1989	1990	1991	1992	1993	1994	1995	1996	1997	1998(p)
Manufacturing Industries		**689.0**	**695.4**	**638.7**	**819.9**	**813.7**	**967.0**	**1,183.8**	**1,517.3**	**1,676.9**	**1,915.7**
3211	Aircraft and Aircraft Parts Industry	65.0	100.5	78.1	106.5	81.1	102.2	114.9	197.7	169.0	247.3
335	Communication and Other Electronic Equipment	184.0	162.0	151.0	229.0	206.4	240.6	335.5	533.8	541.7	617.0
336	Office, Store and Business Machines	134.0	132.0	129.0	167.0	217.7	255.0	338.1	351.0	451.5	483.0
3372	Electrical Switchgear and Protective Equipment	55.8	55.6	44.7	32.5	29.1	33.1	34.2	40.3	47.2	49.1
3379	Other Electrical Industrial Equipment Industries	42.4	48.7	45.2	81.8	53.7	54.9	66.1	84.6	94.7	98.6
3911	Indicating, Recording and Controlling Instruments Industry	20.0	19.7	14.8	27.9	37.1	42.4	46.1	72.3	90.6	103.7
3912	Other Instruments and Related Products Industry	23.7	22.7	23.5	26.4	26.8	41.5	47.4	52.8	61.6	87.9
3192	Construction, Mining Machinery & Materials Handling Equipment	40.6	36.4	33.2	32.5	29.3	36.8	45.3	41.3	41.3	42.4
3194	Turbine and Mechanical Power Transmission Equipment	2.8	2.6	2.9	2.2	2.8	3.6	4.6	4.3	5.0	5.2
3199	Other Machinery and Equipment Industries N.E.C.	6.8	6.8	5.5	4.9	4.8	5.0	6.6	6.4	8.8	9.1
37grp	Chemical and Chemical Products group	57.1	51.0	59.0	50.0	75.2	93.0	88.7	88.4	114.4	112.5
3grp	Other Manufacturing Group	56.8	57.4	51.8	59.2	49.7	58.9	56.3	44.4	51.1	59.9
Service Industries[1]		**1,856.1**	**2,112.3**	**2,020.3**	**2,240.5**	**2,547.8**	**2,651.7**	**2,968.9**	**3,453.7**	**3,860.2**	**3,759.2**
772	Computer and related services	393.8	544.5	650.3	822.5	1,039.4	1,094.0	1,180.0	1,435.0	1,578.0	1,676.7
7752	Engineering services	1,046.7	1,113.3	919.3	924.6	979.7	936.9	1,098.6	1,064.3	1,529.8	1,408.3
7759	Scientific and Technical Services	330.1	360.6	354.7	384.8	429.8	507.9	560.0	804.7	630.5	576.4
868	Medical and other Health Laboratories	85.5	93.9	96.0	108.6	98.9	112.9	130.3	149.7	121.9	97.8
High Technology Sector Total		**2,545.1**	**2,807.7**	**2,659.0**	**3,060.4**	**3,361.5**	**3,618.7**	**4,152.7**	**4,971.0**	**5,537.1**	**5,674.9**

(P) 1998 estimates are preliminary.

1. Note that revenues for the service industries are collected on a company rather than establishment basis. As a result, revenues for SICs 772, 7752, 7759 and 868 represent the entire Canadian earnings of companies headquartered in British Columbia.

Source: BC STATS and Statistics Canada

Detailed Table 5 (ctd). High Technology Sector Revenues, 1989-1998

SIC	INDUSTRY	% change from previous year								
		1990	1991	1992	1993	1994	1995	1996	1997	1998(p)
Manufacturing Industries		**0.9**	**-8.2**	**28.4**	**-0.8**	**18.8**	**22.4**	**28.2**	**10.5**	**14.2**
3211	Aircraft and Aircraft Parts Industry	54.6	-22.3	36.4	-23.8	26.0	12.4	72.1	-14.5	46.3
335	Communication and Other Electronic Equipment	-12.0	-6.8	51.7	-9.9	16.6	39.4	59.1	1.5	13.9
336	Office, Store and Business Machines	-1.5	-2.3	29.5	30.4	17.1	32.6	3.8	28.6	7.0
3372	Electrical Switchgear and Protective Equipment	-0.4	-19.6	-27.3	-10.5	13.7	3.3	17.8	17.1	4.0
3379	Other Electrical Industrial Equipment Industries	14.9	-7.2	81.0	-34.4	2.2	20.4	28.0	11.9	4.1
3911	Indicating, Recording and Controlling Instruments Industry	-1.5	-24.9	88.5	33.0	14.3	8.7	56.8	25.3	14.5
3912	Other Instruments and Related Products Industry	-4.2	3.5	12.3	1.5	54.9	14.2	11.4	16.7	42.7
3192	Construction, Mining Machinery & Materials Handling Equipment	-10.3	-8.8	-2.1	-9.8	25.6	23.1	-8.8	0.0	2.7
3194	Turbine and Mechanical Power Transmission Equipment	-7.1	11.5	-24.1	27.3	28.6	27.8	-6.5	16.3	4.0
3199	Other Machinery and Equipment Industries N.E.C.	0.0	-19.1	-10.9	-2.0	4.2	32.0	-3.0	37.5	3.4
37grp	Chemical and Chemical Products group	-10.7	15.7	-15.3	50.4	23.7	-4.6	-0.3	29.4	-1.7
3grp	Other Manufacturing Group	1.1	-9.8	14.3	-16.0	18.5	-4.4	-21.1	15.1	17.2
Service Industries[1]		**13.8**	**-4.4**	**10.9**	**13.7**	**4.1**	**12.0**	**16.3**	**11.8**	**-2.6**
772	Computer and related services	38.3	19.4	26.5	26.4	5.3	7.9	21.6	10.0	6.3
7752	Engineering services	6.4	-17.4	0.6	6.0	-4.4	17.3	-3.1	43.7	-7.9
7759	Scientific and Technical Services	9.2	-1.6	8.5	11.7	18.2	10.3	43.7	-21.6	-8.6
868	Medical and other Health Laboratories	9.8	2.2	13.1	-8.9	14.2	15.4	14.9	-18.6	-19.8
High Technology Sector Total		**10.3**	**-5.3**	**15.1**	**9.8**	**7.7**	**14.8**	**19.7**	**11.4**	**2.5**

(P) 1998 estimates are preliminary.

1. Note that revenues for the service industries are collected on a company rather than establishment basis. As a result, revenues for SICs 772, 7752, 7759 and 868 represent the entire Canadian earnings of companies headquartered in British Columbia.

Source: BC STATS and Statistics Canada

Detailed Table 6. High Technology Sector Employment, 1989-1999

SIC	INDUSTRY	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Manufacturing Industries		**7,880**	**6,500**	**5,710**	**6,260**	**6,820**	**6,430**	**6,940**	**7,630**	**8,610**	**9,370**	**11,260**
3211	Aircraft and Aircraft Parts Industry	610	600	580	550	850	810	790	1,020	1,090	1,190	1,300
335	Communication and Other Electronic Equipment	2,330	1,900	1,630	2,110	2,000	1,950	2,430	2,630	3,010	3,460	5,220
336	Office, Store and Business Machines	1,270	1,080	1,100	1,290	1,360	1,410	1,500	1,450	1,710	1,610	1,600
3372	Electrical Switchgear and Protective Equipment	50	50	40	40	40	30	30	30	30	50	60
3379	Other Electrical Industrial Equipment Industries	40	40	40	50	40	30	40	60	60	90	110
3911	Indicating, Recording and Controlling Instruments Industry	950	660	450	630	730	500	490	720	750	830	820
3912	Other Instruments and Related Products Industry	1,000	630	580	530	620	480	540	640	600	670	660
3192	Construction, Mining Machinery & Materials Handling Equipment	340	280	230	160	230	240	280	270	290	310	320
3194	Turbine and Mechanical Power Transmission Equipment	30	20	20	20	20	20	30	30	30	30	30
3199	Other Machinery and Equipment Industries	70	60	40	30	40	40	40	50	50	60	60
37grp	Chemical and Chemical Products Group	550	570	520	410	460	610	480	490	730	780	770
3grp	Other Manufacturing Group	640	610	480	440	430	310	290	240	260	290	310
Service Industries		**15,700**	**19,870**	**22,920**	**22,880**	**24,510**	**26,250**	**31,890**	**33,550**	**36,030**	**37,950**	**40,800**
772	Computer and related services	3,930	5,390	7,910	10,160	9,850	9,780	9,490	11,210	12,500	13,710	16,600
7752	Engineering services	7,200	8,910	8,870	7,300	8,500	9,250	13,080	13,070	14,260	14,820	14,520
7759	Scientific and Technical Services	2,780	3,440	3,420	3,040	3,730	5,010	6,670	6,370	6,640	6,610	6,470
868	Medical and other Health Laboratories	1,790	2,130	2,720	2,380	2,430	2,210	2,650	2,900	2,630	2,810	3,210
High Technology Sector Total		**23,580**	**26,370**	**28,630**	**29,140**	**31,330**	**32,680**	**38,830**	**41,180**	**44,640**	**47,320**	**52,060**
BC Industrial Aggregate		**1,221,100**	**1,285,600**	**1,259,700**	**1,259,200**	**1,313,100**	**1,342,000**	**1,402,600**	**1,417,000**	**1,454,900**	**1,478,700**	**1,480,120**

Source: BC STATS and Statistics Canada

Detailed Table 6 (ctd). High Technology Sector Employment, 1989-1999

Year-Over-Year Change		% change from previous year									
SIC	INDUSTRY	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Manufacturing Industries		**-17.5**	**-12.2**	**9.6**	**8.9**	**-5.7**	**7.9**	**9.9**	**12.8**	**8.8**	**20.2**
3211	Aircraft and Aircraft Parts Industry	-1.6	-3.3	-5.2	54.5	-4.7	-2.5	29.1	6.9	9.2	9.2
335	Communication and Other Electronic Equipment	-18.5	-14.2	29.4	-5.2	-2.5	24.6	8.2	14.4	15.0	50.9
336	Office, Store and Business Machines	-15.0	1.9	17.3	5.4	3.7	6.4	-3.3	17.9	-5.8	-0.6
3372	Electrical Switchgear and Protective Equipment	0.0	-20.0	0.0	0.0	-25.0	0.0	0.0	0.0	66.7	20.0
3379	Other Electrical Industrial Equipment Industries	0.0	0.0	25.0	-20.0	-25.0	33.3	50.0	0.0	50.0	22.2
3911	Indicating, Recording and Controlling Instruments Industry	-30.5	-31.8	40.0	15.9	-31.5	-2.0	46.9	4.2	10.7	-1.2
3912	Other Instruments and Related Products Industry	-37.0	-7.9	-8.6	17.0	-22.6	12.5	18.5	-6.3	11.7	-1.5
3192	Construction, Mining Machinery & Materials Handling Equipment	-17.6	-17.9	-30.4	43.8	4.3	16.7	-3.6	7.4	6.9	3.2
3194	Turbine and Mechanical Power Transmission Equipment	-33.3	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0
3199	Other Machinery and Equipment Industries	-14.3	-33.3	-25.0	33.3	0.0	0.0	25.0	0.0	20.0	0.0
37grp	Chemical and Chemical Products Group	3.6	-8.8	-21.2	12.2	32.6	-21.3	2.1	49.0	6.8	-1.3
3grp	Other Manufacturing Group	-4.7	-21.3	-8.3	-2.3	-27.9	-6.5	-17.2	8.3	11.5	6.9
Service Industries		**26.6**	**15.3**	**-0.2**	**7.1**	**7.1**	**21.5**	**5.2**	**7.4**	**5.3**	**7.5**
772	Computer and related services	37.2	46.8	28.4	-3.1	-0.7	-3.0	18.1	11.5	9.7	21.1
7752	Engineering services	23.8	-0.4	-17.7	16.4	8.8	41.4	-0.1	9.1	3.9	-2.0
7759	Scientific and Technical Services	23.7	-0.6	-11.1	22.7	34.3	33.1	-4.5	4.2	-0.5	-2.1
868	Medical and other Health Laboratories	19.0	27.7	-12.5	2.1	-9.1	19.9	9.4	-9.3	6.8	14.2
High Technology Sector Total		**11.8**	**8.6**	**1.8**	**7.5**	**4.3**	**18.8**	**6.1**	**8.4**	**6.0**	**10.0**
BC Industrial Aggregate		**5.3**	**-2.0**	**0.0**	**4.3**	**2.3**	**3.7**	**1.1**	**2.4**	**0.9**	**0.1**

Source: BC STATS and Statistics Canada

Detailed Table 7. Employment by Industry, British Columbia, 1989-1999

	Persons (thousands)										
	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998[1]	1999[1]
Primary & Goods Producing Industries (excluding agriculture & fishing)	**295.8**	**302.9**	**275.7**	**270.1**	**274.6**	**282.7**	**280.0**	**283.3**	**291.8**	**291.1**	**290.0**
Agriculture & Related	na	na	na	na	na	na	na	na	na	na	na
Agriculture	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Food (excl. fish products)	*14.7*	*14.8*	*14.7*	*13.9*	*13.2*	*14.4*	*13.5*	*15.0*	*16.2*	*16.6*	*15.4*
Beverages	*3.2*	*3.3*	*2.7*	*2.7*	*2.6*	*3.3*	*3.3*	*2.6*	*3.2*	*3.3*	*3.5*
Fishing & Related	na	na	na	na	na	na	na	na	na	na	na
Fishing	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Fish Products	*3.8*	*4.1*	*4.0*	*4.1*	*4.2*	*4.7*	*3.4*	*3.7*	*3.7*	*3.6*	*3.0*
Forestry & Related	89.8	89.8	86.1	81.5	83.6	89.3	87.6	88.1	86.6	82.3	85.7
Logging & Forestry	*25.7*	*23.2*	*25.3*	*24.4*	*26.8*	*28.5*	*29.5*	*29.3*	*28.8*	*27.3*	*28.4*
Paper & Allied Products	*21.7*	*22.3*	*20.9*	*18.5*	*18.7*	*18.0*	*18.2*	*16.5*	*14.8*	*15.0*	*15.9*
Wood Manufacturing	*42.3*	*44.3*	*39.8*	*38.6*	*38.1*	*42.8*	*39.9*	*42.3*	*43.0*	*40.1*	*41.4*
Mining & Related	39.2	40.8	35.0	32.3	32.4	34.2	36.0	34.5	36.1	36.6	34.3
Other Manufacturing	71.5	68.6	57.5	56.2	57.3	56.5	56.3	57.5	61.4	65.0	67.4
Construction	65.6	73.3	66.5	69.7	70.3	69.1	69.1	70.9	73.9	72.0	68.1
Utilities	8.0	8.3	9.2	9.8	11.1	11.3	10.9	11.0	10.7	11.8	12.6
Service Producing Industries	**925.2**	**982.7**	**984.1**	**989.1**	**1,038.5**	**1,060.2**	**1,113.1**	**1,125.3**	**1,149.9**	**1,163.4**	**1,166.2**
Transportation, Storage & Communication	111.2	105.5	107.2	96.8	99.2	106.6	112.6	100.8	101.9	101.9	101.4
Retail & Wholesale Trade	236.9	256.0	251.4	252.3	260.7	253.9	267.3	269.0	273.8	276.9	278.1
Finance, Insurance & Real Estate	72.1	77.5	81.0	82.1	90.3	87.0	87.9	85.2	89.1	90.0	88.1
Educational & Related	94.2	99.1	100.8	102.1	110.2	111.3	119.0	127.7	128.5	129.6	131.2
Health & Social	121.5	124.8	131.5	134.8	132.9	143.5	149.8	153.5	154.1	159.4	163.2
Accommodation, Food & Beverage	94.9	108.9	104.1	107.8	127.1	125.7	127.6	132.7	138.0	139.7	138.8
Amusement & Recreation	17.0	16.8	20.7	22.7	23.6	27.5	28.6	30.0	29.5	28.1	25.7
Business, Personal & Other	109.5	124.0	114.5	117.5	120.2	130.7	147.1	153.0	162.5	165.4	169.1
Government	67.8	70.1	72.8	73.2	74.4	74.2	73.3	73.3	72.5	72.5	70.6
BC Industrial Aggregate (excluding agriculture & fishing)	**1,221.1**	**1,285.6**	**1,259.7**	**1,259.2**	**1,313.1**	**1,342.0**	**1,402.6**	**1,417.0**	**1,454.9**	**1,478.7**	**1,480.1**
High Technology Sector Total	**23.6**	**26.4**	**28.7**	**29.1**	**31.3**	**32.7**	**38.8**	**41.2**	**44.7**	**47.3**	**52.1**

2. 1998 and 1999 totals exceed the sum of the components due to the inclusion of workers in companies which were not allocated to a particular industry.
Source: BC STATS and Statistics Canada

Detailed Table 7 (ctd). Employment by Industry, British Columbia, 1989-1999

	% change from previous year									
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Primary & Goods Producing Industries (excluding agriculture & fishing)	**2.4**	**-9.0**	**-2.0**	**1.6**	**3.0**	**-0.9**	**1.1**	**3.0**	**-0.2**	**-0.4**
Agriculture & Related	na	na	na	na	na	na	na	na	na	na
Agriculture	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Food (excl. fish products)	*0.8*	*-0.8*	*-5.2*	*-5.2*	*9.2*	*-5.8*	*10.7*	*8.3*	*2.0*	*-7.0*
Beverages	*2.0*	*-16.5*	*-0.3*	*-6.3*	*28.1*	*-0.5*	*-20.8*	*22.8*	*5.3*	*4.1*
Fishing & Related	na	na	na	na	na	na	na	na	na	na
Fishing	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*	*na*
Fish Products	*8.1*	*-1.7*	*1.9*	*2.7*	*11.9*	*-26.8*	*8.0*	*0.7*	*-4.4*	*-14.7*
Forestry & Related	0.0	-4.2	-5.3	2.6	6.8	-1.8	0.5	-1.7	-5.0	4.1
Logging & Forestry	*-9.9*	*9.3*	*-3.7*	*10.1*	*6.1*	*3.4*	*-0.7*	*-1.5*	*-5.4*	*4.2*
Paper & Allied Products	*2.6*	*-6.3*	*-11.4*	*0.9*	*-3.7*	*1.5*	*-9.4*	*-10.7*	*1.3*	*6.5*
Wood Manufacturing	*4.7*	*-10.1*	*-3.1*	*-1.3*	*12.3*	*-6.7*	*6.0*	*1.8*	*-6.9*	*3.2*
Mining & Related	3.8	-14.1	-7.8	0.4	5.7	5.1	-4.1	4.7	1.4	-6.3
Other Manufacturing	-4.1	-16.1	-2.4	1.9	-1.3	-0.4	2.2	6.7	5.9	3.7
Construction	11.7	-9.3	4.8	0.8	-1.6	-0.1	2.5	4.3	-2.6	-5.4
Utilities	3.6	11.0	6.1	13.7	1.3	-3.6	1.4	-3.3	10.5	7.2
Service Producing Industries	6.2	0.1	0.5	5.0	2.1	5.0	1.1	2.2	1.2	0.2
Transportation, Storage & Communication	-5.2	1.7	-9.7	2.5	7.5	5.7	-10.5	1.1	0.0	-0.5
Retail & Wholesale Trade	8.1	-1.8	0.3	3.4	-2.6	5.3	0.7	1.8	1.1	0.4
Finance, Insurance & Real Estate	7.6	4.5	1.3	10.1	-3.7	1.0	-3.1	4.5	1.0	-2.0
Educational & Related	5.2	1.7	1.3	7.9	1.0	6.9	7.3	0.7	0.8	1.2
Health & Social	2.7	5.3	2.6	-1.4	8.0	4.4	2.4	0.4	3.4	2.4
Accommodation, Food & Beverage	14.8	-4.4	3.6	17.9	-1.1	1.6	3.9	4.0	1.3	-0.7
Amusement & Recreation	-1.4	23.4	9.3	4.2	16.4	4.0	4.9	-1.7	-4.5	-8.6
Business, Personal & Other	13.2	-7.7	2.6	2.3	8.7	12.5	4.0	6.2	1.8	2.3
Government	3.3	3.9	0.4	1.7	-0.2	-1.3	0.1	-1.1	0.0	-2.6
BC Industrial Aggregate (excluding agriculture & fishing)	**5.3**	**-2.0**	**0.0**	**4.3**	**2.2**	**4.5**	**1.0**	**2.7**	**1.6**	**0.1**
High Technology Sector Total	**12.0**	**8.6**	**1.7**	**7.5**	**4.4**	**18.7**	**6.1**	**8.5**	**5.9**	**10.1**

Source: BC STATS and Statistics Canada

Detailed Table 8. High Technology Sector Wages and Salaries, 1989-1999

Value ($ million)

SIC	INDUSTRY	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Manufacturing Industries		**243.9**	**188.3**	**182.5**	**210.6**	**235.8**	**232.8**	**247.5**	**302.7**	**354.1**	**401.7**	**502.0**
3211	Aircraft and Aircraft Parts Industry	18.7	20.4	20.7	21.4	32.1	28.9	30.4	42.7	44.8	52.7	55.4
335	Communication and Other Electronic Equipment	75.3	52.5	53.6	77.6	71.4	77.8	85.3	105.0	123.1	148.5	242.4
336	Office, Store and Business Machines	49.0	29.7	34.5	37.7	43.3	46.9	55.4	62.6	80.0	81.7	86.9
3372	Electrical Switchgear and Protective Equipment	1.5	1.6	1.3	1.3	1.2	1.3	1.2	1.2	1.4	2.4	3.1
3379	Other Electrical Industrial Equipment Industries	1.7	1.9	1.7	2.4	2.0	1.7	2.1	2.3	2.9	4.6	5.8
3911	Indicating, Recording and Controlling Instruments Industry	23.7	16.6	11.4	17.4	22.1	15.3	13.9	23.9	24.4	27.0	26.7
3912	Other Instruments and Related Products Industry	24.9	15.8	14.7	14.5	18.7	14.7	15.4	21.3	19.6	21.6	21.4
3192	Construction, Mining Machinery & Materials Handling Equipment	10.5	9.5	8.4	6.5	9.3	9.8	12.0	12.4	13.1	14.8	13.8
3194	Turbine and Machanical Power Transmission Equipment	0.8	0.8	0.8	0.6	0.9	1.0	1.1	1.2	1.4	1.5	1.4
3199	Other Machinery and Equipment Industries N.E.C.	2.0	2.1	1.6	1.2	1.7	1.7	1.8	2.4	2.4	2.7	2.5
37grp	Chemical and Chemical Products group	16.9	18.3	18.1	15.2	17.7	22.1	18.3	18.5	30.3	31.9	29.1
3grp	Other Manufacturing Group	18.9	19.1	15.7	14.8	15.4	11.6	10.6	9.2	10.7	12.3	13.5
Service Industries[1]		**494.2**	**678.9**	**841.3**	**862.7**	**934.3**	**1,008.5**	**1,377.4**	**1,455.5**	**1,621.0**	**1,680.0**	**1,846.2**
772	Computer and related services	114.0	150.1	269.4	366.8	387.7	382.6	403.1	481.6	572.4	627.0	775.6
7752	Engineering services	247.9	344.6	355.3	302.5	330.0	362.0	588.9	594.1	654.4	663.2	665.9
7759	Scientific and Technical Services	95.6	133.0	137.1	125.9	144.8	196.3	300.2	289.4	304.9	295.7	296.9
868	Medical and other Health Laboratories	36.7	51.2	79.5	67.5	71.8	67.6	85.2	90.4	89.3	94.1	107.8
High Technology Sector Total		**738.1**	**867.2**	**1,023.8**	**1,073.3**	**1,170.1**	**1,241.3**	**1,624.9**	**1,758.2**	**1,975.1**	**2,081.7**	**2,348.2**
BC Industrial Aggregate		**31,416.1**	**34,222.4**	**34,829.0**	**35,739.9**	**38,105.0**	**40,320.2**	**43,362.1**	**44,760.4**	**46,460.9**	**47,562.6**	**48,110.0**

1. Wages and Salaries data are not available at the four-digit level for SICs 7752 and 7759. A ratio was applied to the wages and salaries value for SIC 775 in order to divide it between SICs 7752 and 7759. This is why the two industries have the same growth rate.

Source: BC STATS and Statistics Canada

Detailed Table 8 (ctd). High Technology Sector Wages and Salaries, 1989-1999

SIC	INDUSTRY	% change from previous year									
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Manufacturing Industries		**-22.8**	**-3.1**	**15.4**	**12.0**	**-1.3**	**6.3**	**22.3**	**17.0**	**13.4**	**25.0**
3211	Aircraft and Aircraft Parts Industry	9.1	1.5	3.4	50.0	-10.0	5.2	40.5	4.9	17.6	5.1
335	Communication and Other Electronic Equipment	-30.3	2.1	44.8	-8.0	9.0	9.6	23.1	17.2	20.6	63.2
336	Office, Store and Business Machines	-39.4	16.2	9.3	14.9	8.3	18.1	13.0	27.8	2.1	6.4
3372	Electrical Switchgear and Protective Equipment	6.7	-18.8	0.0	-7.7	8.3	-7.7	0.0	16.7	71.4	29.2
3379	Other Electrical Industrial Equipment Industries	11.8	-10.5	41.2	-16.7	-15.0	23.5	9.5	26.1	58.6	26.1
3911	Indicating, Recording and Controlling Instruments Industry	-30.0	-31.3	52.6	27.0	-30.8	-9.2	71.9	2.1	10.7	-1.1
3912	Other Instruments and Related Products Industry	-36.5	-7.0	-1.4	29.0	-21.4	4.8	38.3	-8.0	10.2	-0.9
3192	Construction, Mining Machinery & Materials Handling Equipment	-9.5	-11.6	-22.6	43.1	5.4	22.4	3.3	5.6	13.0	-6.8
3194	Turbine and Mechanical Power Transmission Equipment	0.0	0.0	-25.0	50.0	11.1	10.0	9.1	16.7	7.1	-6.7
3199	Other Machinery and Equipment Industries	5.0	-23.8	-25.0	41.7	0.0	5.9	33.3	0.0	12.5	-7.4
37grp	Chemical and Chemical Products Group	8.3	-1.1	-16.0	16.4	24.9	-17.2	1.1	63.8	5.3	-8.8
3grp	Other Manufacturing Group	1.1	-17.8	-5.7	4.1	-24.7	-8.6	-13.2	16.3	15.0	9.8
Service Industries[1]		**37.4**	**23.9**	**2.5**	**8.3**	**7.9**	**36.6**	**5.7**	**11.4**	**3.6**	**9.9**
772	Computer and related services	31.7	79.5	36.2	5.7	-1.3	5.4	19.5	18.9	9.5	23.7
7752	Engineering services	39.0	3.1	-14.9	9.1	9.7	62.7	0.9	10.1	1.3	0.4
7759	Scientific and Technical Services	39.1	3.1	-8.2	15.0	35.6	52.9	-3.6	5.4	-3.0	0.4
868	Medical and other Health Laboratories	39.5	55.3	-15.1	6.4	-5.8	26.0	6.1	-1.2	5.4	14.6
High Technology Sector Total		**17.5**	**18.1**	**4.8**	**9.0**	**6.1**	**30.9**	**8.2**	**12.3**	**5.4**	**12.8**
BC Industrial Aggregate		**8.9**	**1.8**	**2.6**	**6.6**	**5.8**	**7.5**	**3.2**	**3.8**	**2.4**	**1.2**

1. Wages and Salaries data are not available at the four-digit level for SICs 7752 and 7759. A ratio was applied to the wages and salaries value for SIC 775 in order to divide it between SICs 7752 and 7759. This is why the two industries have the same growth rate.

Source: BC STATS and Statistics Canada

Detailed Table 9. High Technology Sector Average Weekly Earnings[1], 1989-1999

Dollars per employee per week (including overtime)

SIC	INDUSTRY	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	Manufacturing Industries	**600**	**560**	**610**	**650**	**660**	**690**	**690**	**760**	**790**	**820**	**860**
3211	Aircraft and Aircraft Parts Industry	590	660	690	740	730	680	740	800	790	850	820
335	Communication and Other Electronic Equipment	620	530	630	710	690	770	680	770	790	830	890
336	Office, Store and Business Machines	740	530	600	560	610	640	710	830	900	970	1,040
3372	Electrical Switchgear and Protective Equipment	550	610	600	600	660	700	770	810	820	970	1,040
3379	Other Electrical Industrial Equipment Industries	830	930	890	930	930	960	920	810	880	970	1,040
3911	Indicating, Recording and Controlling Instruments Industry	480	480	490	530	580	590	550	640	620	630	620
3912	Other Instruments and Related Products Industry	480	480	490	530	580	590	550	640	620	630	620
3192	Construction, Mining Machinery & Materials Handling Equipment	600	650	700	770	760	790	820	890	860	920	830
3194	Turbine and Machanical Power Transmission Equipment	600	650	700	770	760	790	820	890	860	920	830
3199	Other Machinery and Equipment Industries N.E.C.	600	650	700	770	760	790	820	890	860	920	830
37gr p	Chemical and Chemical Products group	590	610	670	710	730	700	730	720	790	790	720
3grp	Other Manufacturing Group	570	600	630	650	690	720	700	750	780	820	830
	Service Industries	**610**	**660**	**710**	**730**	**730**	**740**	**830**	**830**	**870**	**850**	**870**
772	Computer and related services	560	540	650	690	760	750	820	830	880	880	900
7752	Engineering services	660	740	770	800	750	750	870	870	880	860	880
7759	Scientific and Technical Services	660	740	770	800	750	750	870	870	880	860	880
868	Medical and other Health Laboratories	390	460	560	550	570	590	620	600	650	640	640
High Technology Sector Total		**600**	**630**	**690**	**710**	**720**	**730**	**800**	**820**	**850**	**850**	**870**
BC Industrial Aggregate		**490**	**510**	**530**	**550**	**560**	**580**	**590**	**610**	**610**	**620**	**630**

1. Wages and Salaries data are not available at the four-digit level for many of the industries shown. Larger industry aggregations are used to calculate average weekly earnings, thus explaining why some similar industries have the same growth rate.

Source: BC STATS and Statistics Canada

Detailed Table 9 (ctd). High Technology Sector Average Weekly Earnings[1], 1989-1999

SIC	INDUSTRY	% change from previous year									
		1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Manufacturing Industries		**-6.8**	**10.5**	**5.1**	**2.9**	**4.3**	**-1.0**	**11.4**	**3.2**	**4.6**	**3.9**
3211	Aircraft and Aircraft Parts Industry	11.3	5.0	8.0	-1.9	-6.6	8.7	8.7	-1.8	7.4	-3.4
335	Communication and Other Electronic Equipment	-14.7	19.4	11.5	-2.8	11.5	-11.7	13.5	2.4	5.1	8.2
336	Office, Store and Business Machines	-29.0	13.9	-6.8	9.5	4.0	11.2	17.1	8.4	8.2	7.1
3372	Electrical Switchgear and Protective Equipment	12.2	-2.5	1.0	10.0	5.7	9.3	6.0	0.9	18.9	6.5
3379	Other Electrical Industrial Equipment Industries	12.6	-5.1	4.3	0.1	3.4	-3.7	-12.0	8.1	10.9	6.5
3911	Indicating, Recording and Controlling Instruments Industry	0.2	1.4	8.0	10.1	1.0	-6.5	16.6	-2.5	0.5	-0.2
3912	Other Instruments and Related Products Industry	0.2	1.4	8.0	10.1	1.0	-6.5	16.6	-2.5	0.5	-0.2
3192	Construction, Mining Machinery & Materials Handling Equipment	9.9	7.3	9.3	-1.1	3.7	4.5	7.9	-2.4	5.9	-9.7
3194	Turbine and Mechanical Power Transmission Equipment	9.9	7.3	9.3	-1.1	3.7	4.5	7.9	-2.4	5.9	-9.7
3199	Other Machinery and Equipment Industries	9.9	7.3	9.3	-1.1	3.7	4.5	7.9	-2.4	5.9	-9.7
37gr p	Chemical and Chemical Products Group	3.4	8.4	6.0	3.8	-4.8	4.9	-1.4	9.8	-0.7	-8.2
3grp	Other Manufacturing Group	6.5	5.1	3.1	5.8	4.3	-3.0	7.0	4.2	4.7	1.2
Service Industries		**8.5**	**7.3**	**2.8**	**1.1**	**0.7**	**12.4**	**0.5**	**3.7**	**-1.6**	**2.2**
772	Computer and related services	-3.9	22.2	6.1	9.0	-0.7	8.6	1.1	6.6	-0.1	2.1
7752	Engineering services	12.3	3.5	3.6	-6.3	0.8	15.0	1.0	1.0	-2.5	2.5
7759	Scientific and Technical Services	12.3	3.5	3.6	-6.3	0.8	15.0	1.0	1.0	-2.5	2.5
868	Medical and other Health Laboratories	16.9	21.8	-2.9	4.2	3.6	5.1	-3.0	8.5	-1.2	0.1
High Technology Sector Total		**4.9**	**8.7**	**3.1**	**1.4**	**1.6**	**10.3**	**2.1**	**3.5**	**-0.5**	**2.5**
BC Industrial Aggregate		**3.5**	**3.9**	**2.7**	**2.2**	**3.5**	**2.9**	**2.2**	**1.1**	**0.7**	**1.1**

1. Wages and Salaries data are not available at the four-digit level for many of the industries shown. Larger industry aggregations are used to calculate average weekly earnings, thus explaining why some similar industries have the same growth rate.

Source: BC STATS and Statistics Canada

Detailed Table 10. High Technology Sector Establishments, by Development Region and Regional District, 1995-1999

Development Region / Regional District		1995			1996			1997			1998			1999		
		Mfg	Service	Total	Mfg	Service	Total	Mfg	Service	Total	Mfg	Service	Total	Mfg	Service	Total
Vancouver Island/Coast		**138**	**695**	**833**	**144**	**761**	**905**	**175**	**880**	**1,055**	**185**	**975**	**1,160**	**187**	**1,086**	**1,273**
23	Alberni-Clayoquot	2	16	18	3	21	24	6	20	26	7	23	30	8	23	31
17	Capital	79	456	535	84	470	554	98	541	639	93	616	709	91	674	765
45	Central Coast	10	1	11	1	2	3	1	2	3	2	1	3	1	1	2
25	Comox-Strathcona	18	54	72	21	66	87	26	85	111	33	84	117	33	89	122
19	Cowichan Valley	11	37	48	8	43	51	8	51	59	11	61	72	16	81	97
43	Mount Waddington	1	2	3	1	3	4	3	6	9	3	11	14	3	12	15
21	Nanaimo	23	121	144	22	142	164	26	161	187	32	164	196	30	187	217
27	Powell River	3	8	11	4	14	18	7	14	21	4	15	19	5	19	24
Mainland/Southwest		**942**	**2,469**	**3,411**	**971**	**2,835**	**3,806**	**1,009**	**3,096**	**4,105**	**992**	**3,439**	**4,431**	**1,024**	**3,712**	**4,736**
09	Fraser Valley	59	120	179	59	128	187	50	103	153	66	114	180	66	133	199
15	Greater Vancouver	877	2,300	3,177	904	2,650	3,554	949	2,926	3,875	908	3,263	4,171	937	3,512	4,449
31	Squamish-Lillooet	2	29	31	2	33	35	6	38	44	10	36	46	12	37	49
29	Sunshine Coast	4	20	24	6	24	30	4	29	33	8	26	34	9	30	39
Thompson/Okanagan		**97**	**369**	**466**	**108**	**429**	**537**	**127**	**483**	**610**	**136**	**496**	**632**	**151**	**514**	**665**
35	Central Okanagan	35	138	173	40	168	208	44	169	213	48	172	220	62	172	234
39	Columbia-Shuswap	3	30	33	5	39	44	9	49	58	7	60	67	9	62	71
37	North Okanagan	20	52	72	20	65	85	24	77	101	26	75	101	25	77	102
07	Okanagan-Similkameen	14	48	62	16	48	64	17	57	74	18	58	76	19	67	86
33	Thompson-Nicola	25	101	126	27	109	136	33	131	164	37	131	168	36	136	172
Kootenay		**20**	**109**	**129**	**23**	**121**	**144**	**40**	**129**	**169**	**36**	**142**	**178**	**40**	**159**	**199**
03	Central Kootenay	7	48	55	12	53	65	22	63	85	15	62	77	18	72	90
01	East Kootenay	10	43	53	8	49	57	13	46	59	11	51	62	12	58	70
05	Kootenay Boundary	3	18	21	3	19	22	5	20	25	10	29	39	10	29	39
Cariboo		**26**	**116**	**142**	**27**	**133**	**160**	**29**	**164**	**193**	**39**	**178**	**217**	**49**	**198**	**247**
41	Cariboo	9	27	36	10	36	46	10	47	57	12	55	67	16	60	76
53	Fraser-Ft George	17	89	106	17	97	114	19	117	136	27	123	150	33	138	171
North Coast		**7**	**26**	**33**	**10**	**41**	**51**	**9**	**47**	**56**	**13**	**48**	**61**	**15**	**46**	**61**
49	Kitimat-Stikine	2	17	19	5	32	37	5	33	38	8	32	40	9	31	40
47	Skeena-Queen Charlotte	5	9	14	5	9	14	4	14	18	5	16	21	6	15	21
Nechako		**1**	**22**	**23**	**3**	**34**	**37**	**3**	**42**	**45**	**9**	**43**	**52**	**11**	**46**	**57**
51	Bulkley-Nechako	1	22	23	3	34	37	3	42	45	9	43	52	11	46	57
Northeast		**6**	**69**	**75**	**7**	**78**	**85**	**8**	**86**	**94**	**12**	**94**	**106**	**10**	**95**	**105**
55	Peace River	6	65	71	7	71	78	8	84	92	12	90	102	10	92	102
59	Fort Nelson-Liard	-	4	4	-	7	7	-	2	2	-	4	4	-	3	3
Total		**1,238**	**3,878**	**5,116**	**1,294**	**4,434**	**5,728**	**1,402**	**4,930**	**6,332**	**1,422**	**5,421**	**6,843**	**1,488**	**5,861**	**7,349**

Figures do not add to totals because some establishments did not have geographic codes.
Source: BC STATS and Statistics Canada

Detailed Table 11. High Technology Sector Establishments, by Industry, 1993-1999

SIC	INDUSTRY	1993	1994	1995	1996	1997	1998	1999
Manufacturing Industries		**1,148**	**1,178**	**1,238**	**1,294**	**1,402**	**1,422**	**1,488**
3211	Aircraft and Aircraft Parts Industry	43	49	47	50	50	58	58
335	Communication and Other Electronic Equipment	140	143	153	148	148	136	148
336	Office, Store and Business Machines	67	73	74	71	65	58	62
3372	Electrical Switchgear and Protective Equipment	16	15	20	19	21	23	23
3379	Other Electrical Industrial Equipment Industries	32	34	32	33	34	27	25
3911	Indicating, Recording & Controlling Instruments Industry	34	34	35	40	43	45	50
3912	Other Instruments & Related Products Industry	50	50	53	61	76	80	77
3192	Construction, Mining Machinery & Materials Handling	117	110	108	117	159	168	182
3194	Turbine & Mechanical Power Transmission Equipment	21	22	24	23	21	24	27
3199	Other Machinery and Equipment Industries N.E.C.	144	153	161	179	171	172	185
3999	Other Manufactured Products Industry	383	388	420	432	456	434	437
37grp	Chemical and Chemical Products Group	57	58	58	65	79	84	93
3grp	Other Manufacturing Group	44	49	53	56	79	113	121
Service Industries		**3,300**	**3,534**	**3,878**	**4,434**	**4,930**	**5,421**	**5,861**
772	Computer and related services	1,157	1,279	1,365	1,620	1,860	2,078	2,297
7752	Engineering services	1,286	1,376	1,546	1,683	1,886	1,926	1,939
7759	Scientific and Technical Services	719	736	824	954	1,005	1,205	1,333
868	Medical and other Health Laboratories	138	143	143	177	179	212	292
High Technology Sector		**4,448**	**4,712**	**5,116**	**5,728**	**6,332**	**6,843**	**7,349**

Source: BC STATS, Statistics Canada Business Register Division.

Detailed Table 11. (ctd.) High Technology Sector Establishments, by Industry, 1993-1999

SIC	INDUSTRY	%change from previous year 1994	1995	1996	1997	1998	1999
Manufacturing Industries		**2.6**	**5.1**	**4.5**	**8.3**	**1.4**	**4.6**
3211	Aircraft and Aircraft Parts Industry	14.0	-4.1	6.4	0.0	16.0	0.0
335	Communication and Other Electronic Equipment	2.1	7.0	-3.3	0.0	-8.1	8.8
336	Office, Store and Business Machines	9.0	1.4	-4.1	-8.5	-10.8	6.9
3372	Electrical Switchgear and Protective Equipment	-6.3	33.3	-5.0	10.5	9.5	0.0
3379	Other Electrical Industrial Equipment Industries	6.3	-5.9	3.1	3.0	-20.6	-7.4
3911	Indicating, Recording & Controlling Instruments Industry	0.0	2.9	14.3	7.5	4.7	11.1
3912	Other Instruments & Related Products Industry	0.0	6.0	15.1	24.6	5.3	-3.8
3192	Construction, Mining Machinery & Materials Handling	-6.0	-1.8	8.3	35.9	5.7	8.3
3194	Turbine & Mechanical Power Transmission Equipment	4.8	9.1	-4.2	-8.7	14.3	12.5
3199	Other Machinery and Equipment Industries N.E.C.	6.3	5.2	11.2	-4.5	0.6	7.6
3999	Other Manufactured Products Industry	1.3	8%	3%	6%	-5%	1%
37grp	Chemical and Chemical Products Group	1.8	0.0	12.1	21.5	6.3	10.7
3grp	Other Manufacturing Group	11.4	8%	6%	41%	43%	7%
Service Industries		**7.1**	**9.7**	**14.3**	**11.2**	**10.0**	**8.1**
772	Computer and related services	10.5	6.7	18.7	14.8	11.7	10.5
7752	Engineering services	7.0	12.4	8.9	12.1	2.1	0.7
7759	Scientific and Technical Services	2.4	12.0	15.8	5.3	19.9	10.6
868	Medical and other Health Laboratories	3.6	0.0	23.8	1.1	18.4	37.7
High Technology Sector		**5.9**	**8.6**	**12.0**	**10.5**	**8.1**	**7.4**

Source: BC STATS, Statistics Canada Business Register Division.

Detailed Table 12. High Technology Sector Establishments, by Industry and Establishment Size, 1999

SIC	INDUSTRY	Number of establishments, by number of employees					
		1 to 4	5 to 9	10 to 19	20 to 49	50 plus	Total
Manufacturing Industries		**837**	**212**	**173**	**182**	**84**	**1,488**
3211	Aircraft and Aircraft Parts Industry	33	7	7	7	4	58
335	Communication and Other Electronic Equipment	64	26	21	26	11	148
336	Office, Store and Business Machines	35	9	2	10	6	62
3372	Electrical Switchgear and Protective Equipment	9	6	4	2	2	23
3379	Other Electrical Industrial Equipment Industries	11	4	2	3	5	25
3911	Indicating, Recording & Controlling Instruments Industry	24	2	10	12	2	50
3912	Other Instruments & Related Products Industry	37	8	10	11	11	77
3192	Construction, Mining Machinery & Materials Handling	105	21	26	22	8	182
3194	Turbine & Mechanical Power Transmission Equipment	10	1	9	3	4	27
3199	Other Machinery and Equipment Industries N.E.C.	112	28	14	25	6	185
3999	Other Manufactured Products Industry	282	76	45	26	8	437
37grp	Chemical and Chemical Products Group	41	12	14	20	6	93
3grp	Other Manufacturing Group	74	12	9	15	11	121
Service Industries		**3,961**	**779**	**518**	**425**	**178**	**5,861**
772	Computer and related services	1,547	288	197	183	82	2,297
7752	Engineering services	1,286	262	199	145	47	1,939
7759	Scientific and Technical Services	949	166	100	78	40	1,333
868	Medical and other Health Laboratories	179	63	22	19	9	292
High Technology Sector		**4,798**	**991**	**691**	**607**	**262**	**7,349**
Total, all industries		**92,021**	**26,787**	**18,205**	**12,154**	**5,777**	**154,944**

Source: BC STATS, Statistics Canada Business Register Division.

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6 DETAILED TABLES II
International Trade in High Technology Goods and Services

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Detailed Table 13. Shipments[1] and Exports of BC High Technology Goods and Total Processed Goods, 1989-1999

Value ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
High Technology Goods											
Shipments[1]	689.0	695.5	638.7	819.9	813.7	967.0	1,183.6	1,517.2	1,676.9	1,915.4	2,024.5
Exports	288.0	269.8	267.4	446.3	496.9	519.8	562.7	511.9	609.7	770.1	816.4
Exports as % of Shipments	41.8	38.8	41.9	54.4	61.1	53.8	47.5	33.7	36.4	40.2	40.3
Total Processed Goods											
Shipments[1]	26,596	25,329	23,259	24,839	27,143	31,048	35,040	34,096	34,583	33,890	36,993
Exports of Processed Goods[2]	14,742	13,231	12,077	13,654	16,237	19,698	23,286	21,878	22,499	21,724	24,589
Export Orientation (%)	55.4	52.2	51.9	55.0	59.8	63.4	66.5	64.2	65.1	64.1	66.5

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
High Technology Goods										
Shipments	0.9	-8.2	28.4	-0.8	18.8	22.4	28.2	10.5	14.2	5.7
Exports	-6.3	-0.9	66.9	11.3	4.6	8.3	-9.0	19.1	26.3	6.0
Total Processed Goods										
Shipments	-4.8	-8.2	6.8	9.3	14.4	12.9	-2.7	1.4	-2.0	9.2
Exports of Processed Goods	-10.2	-8.7	13.1	18.9	21.3	18.2	-6.0	2.8	-3.4	13.2

1. Shipments represent revenues from all production, sales, services and related activities in the manufacturing sector.
2. "Processed goods" excludes selected agricultural, fish, logging, mining and energy products not produced by BC manufacturing industries.

Source: BC STATS and Statistics Canada

Detailed Table 14. Exports of High Technology Goods, by Destination and Mode of Transport, 1989-1999

Value ($ million)

Destination	Mode of Transport	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States	Land	140.5	138.1	156.5	282.2	283.8	269.3	251.3	212.9	276.0	436.2	453.3
	Sea	1.2	0.3	0.1	0.1	0.1	0.6	1.9	1.8	4.2	3.8	5.6
	Air	40.1	29.9	28.2	44.9	58.0	97.8	146.8	133.8	144.6	174.7	221.5
	Total	**181.7**	**168.3**	**184.8**	**327.3**	**342.9**	**367.7**	**399.9**	**348.8**	**424.8**	**614.8**	**680.5**
Pacific Rim (total)	Land	2.1	3.6	1.9	4.8	16.9	5.6	10.5	9.5	17.0	8.6	7.6
	Sea	9.9	5.8	8.8	16.4	21.7	19.3	9.6	16.8	18.0	14.7	7.8
	Air	49.9	29.1	30.5	43.4	50.0	61.9	81.0	83.6	82.9	76.1	54.4
	Total	**61.9**	**38.6**	**41.2**	**64.6**	**88.5**	**86.8**	**101.2**	**109.9**	**117.8**	**99.4**	**69.9**
Japan	*Land*	*0.5*	*0.1*	*1.0*	*3.2*	*1.7*	*1.5*	*2.6*	*0.5*	*1.7*	*0.1*	*0.5*
	Sea	*3.2*	*1.2*	*0.1*	*1.3*	*1.3*	*1.8*	*2.1*	*2.5*	*2.5*	*2.1*	*1.2*
	Air	*6.8*	*11.3*	*8.8*	*9.4*	*9.7*	*11.3*	*23.5*	*8.8*	*9.9*	*3.4*	*5.8*
	Total	***10.5***	***12.6***	***10.9***	***13.9***	***12.8***	***14.6***	***28.2***	***11.8***	***14.1***	***5.6***	***7.5***
Pacific Rim (excluding Japan)	*Land*	*1.7*	*3.6*	*0.9*	*1.6*	*15.1*	*4.0*	*8.0*	*8.9*	*15.3*	*8.6*	*7.1*
	Sea	*6.7*	*4.6*	*8.7*	*15.1*	*20.3*	*17.6*	*7.5*	*14.3*	*15.4*	*12.6*	*6.6*
	Air	*43.1*	*17.8*	*21.6*	*34.0*	*40.2*	*50.6*	*57.5*	*74.8*	*73.0*	*72.7*	*48.6*
	Total	***51.4***	***26.0***	***30.3***	***50.7***	***75.7***	***72.2***	***73.0***	***98.0***	***103.7***	***93.9***	***62.4***
European Union	Land	5.2	14.1	0.3	0.2	0.3	0.6	2.6	0.7	1.9	4.5	0.5
	Sea	2.8	3.9	2.0	2.5	10.8	5.3	1.2	3.7	2.6	3.0	7.4
	Air	18.3	24.8	19.3	22.2	22.5	29.7	35.6	19.9	28.0	29.0	29.6
	Total	**26.4**	**42.9**	**21.7**	**24.9**	**33.5**	**35.6**	**39.4**	**24.2**	**32.5**	**36.4**	**37.5**
All Other Countries	Land	7.1	2.5	3.0	2.1	3.7	2.0	2.0	2.2	2.9	1.4	3.3
	Sea	1.6	4.9	1.7	8.9	12.2	5.6	3.2	5.5	18.3	3.4	3.2
	Air	9.3	12.7	15.0	18.4	16.0	22.2	17.0	21.4	13.4	14.6	22.1
	Total	**18.0**	**20.0**	**19.7**	**29.5**	**32.0**	**29.7**	**22.2**	**29.1**	**34.6**	**19.4**	**28.6**
Total	Land	154.9	158.3	161.7	289.4	304.7	277.4	266.4	225.3	297.8	450.7	464.7
	Sea	15.4	15.0	12.7	27.9	44.8	30.8	15.8	27.8	43.0	25.0	24.0
	Air	117.6	96.6	93.0	128.9	146.4	211.6	280.5	258.7	268.8	294.4	327.7
	Total	**288.0**	**269.8**	**267.4**	**446.3**	**496.9**	**519.8**	**562.7**	**511.9**	**609.7**	**770.1**	**816.4**

1. Shipments by land to overseas markets represent the export of BC produced high technology products transshipped by US Ports such as Seattle or Portland.

2. Totals may not equal the sum of Land Sea and Air due to the fact that some respondents did not fill in the survey completely.

Source: BC STATS and Statistics Canada

Detailed Table 14 (ctd). Exports of High Technology Goods, by Destination and Mode of Transport, 1989-1999

Destination	Mode of Transport	% of Exports to Destination[1]										
		1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
United States	Land	77.3	82.0	84.7	86.2	82.8	73.2	62.8	61.1	65.0	71.0	66.6
	Sea	0.6	0.2	0.1	0.0	0.0	0.2	0.5	0.5	1.0	0.6	0.8
	Air	22.1	17.8	15.2	13.7	16.9	26.6	36.7	38.4	34.0	28.4	32.6
Pacific Rim (total)	Land	3.4	9.4	4.7	7.4	19.1	6.4	10.4	8.6	14.4	8.7	10.9
	Sea	16.0	15.1	21.4	25.4	24.5	22.3	9.5	15.3	15.2	14.8	11.2
	Air	80.6	75.5	73.9	67.2	56.5	71.3	80.1	76.1	70.4	76.5	77.9
Japan	*Land*	*4.5*	*0.5*	*8.9*	*22.8*	*13.6*	*10.5*	*9.1*	*4.6*	*12.0*	*1.5*	*6.5*
	Sea	*30.7*	*9.8*	*1.1*	*9.6*	*10.4*	*12.2*	*7.5*	*20.9*	*17.8*	*37.5*	*16.1*
	Air	*64.8*	*89.7*	*80.8*	*67.6*	*76.0*	*77.3*	*83.4*	*74.6*	*70.1*	*61.0*	*77.4*
Pacific Rim (excluding Japan)	*Land*	*3.2*	*13.7*	*3.1*	*3.2*	*20.0*	*5.6*	*10.9*	*9.1*	*14.7*	*9.1*	*11.4*
	Sea	*13.0*	*17.7*	*28.8*	*29.7*	*26.9*	*24.3*	*10.3*	*14.6*	*14.9*	*13.5*	*10.6*
	Air	*83.8*	*68.5*	*71.4*	*67.0*	*53.2*	*70.1*	*78.8*	*76.3*	*70.4*	*77.4*	*78.0*
European Union	Land	19.9	32.9	1.5	0.9	0.9	1.7	6.6	2.7	5.9	12.2	1.3
	Sea	10.5	9.2	9.4	10.1	32.1	14.9	3.0	15.3	8.0	8.3	19.8
	Air	69.4	57.8	89.1	89.0	67.1	83.4	90.4	82.0	86.1	79.5	78.9
All Other Countries	Land	39.6	12.5	15.2	64.9	11.7	6.6	9.0	7.6	8.5	7.1	11.6
	Sea	8.9	24.3	8.5	6.3	38.3	18.7	14.3	18.9	52.9	17.6	11.1
	Air	51.5	63.3	76.3	28.9	50.0	74.7	76.8	73.4	38.6	75.2	77.4
Total	Land	53.8	58.7	60.5	64.9	61.3	53.4	47.3	44.0	48.8	58.5	56.9
	Sea	5.4	5.5	4.7	6.3	9.0	5.9	2.8	5.4	7.1	3.2	2.9
	Air	40.8	35.8	34.8	28.9	29.5	40.7	49.8	50.5	44.1	38.2	40.1

1. Percentages may not add to 100 due to rounding.
2. Shipments by land to overseas markets represent the export of BC produced high technology commodities to non-domestic points of departure such as the Port of Seattle.

Source: BC STATS and Statistics Canada

Detailed Table 15. Top 25 High Technology Export Commodities, 1999

HS Code	Commodity Description [1]	Value ($000,000)	% Total Exports
900110	Optical fibres, optical fibre bundles & cables,other than those of heading 85.44	91.6	11.2
880330	Aircraft parts nes	84.7	10.4
852520	Transmission apparatus, for radio- teleph incorporating reception apparatus	79.0	9.7
853710	Boards, panels, including numerical control panels, for a voltage ó 1,000 V	62.1	7.6
847989	Machines & mechanical appliances nes having individual functions	40.3	4.9
901380	Optical devices, appliances and instruments, nes	38.2	4.7
903289	Automatic regulating or controlling instruments and apparatus, nes	33.9	4.2
851790	Parts of electrical apparatus for line telephone or line telegraphy	32.9	4.0
901819	Electro-diagnostic apparatus, nes	31.4	3.8
854140	Photosensitive semiconductor devices, photovoltaic cells & light emit diodes	29.1	3.6
852990	Parts suitable for use solely or princ with the app of headings 85.25 to 85.28 [2]	28.1	3.4
852530	Television cameras	27.6	3.4
841191	Parts of turbo-jets or turbo-propellers	22.1	2.7
852510	Transmission apparatus for radio-teleph radio-broadcasting or television	20.9	2.6
847330	Parts and accessories of automatic data processing machines & units thereof	19.8	2.4
842489	Mech appl (whether or not hand-op) for proj/disp or spraying liq or powders,nes	15.5	1.9
901480	Navigational instruments and appliances nes	15.4	1.9
847990	Parts of machines & mechanical applian- ces nes having individual functions	11.6	1.4
284440	Radio active elements & isotopes nes, their mixtures & compounds thereof	10.8	1.3
901910	Mechano-therapy appl; massage app; psychological aptitude-testing apparatus	10.7	1.3
841121	NMB Turbo-propellers or a power not exceeding 1100 KW	7.8	1.0
901580	Surveying, hydrographic, oceanographic, meteorological or geophysical inst nes	7.6	0.9
903090	Parts & access for inst & app for meas or checking electrical quantities	6.1	0.7
880230	NMB Aircraft nes of an unladen weight > 2,000 kg but not exceeding 15,000 kg	5.9	0.7
847050	Cash registers	5.6	0.7
Subtotal		**738.8**	**90.5**
	All Other High Technology Commodities	77.6	9.5
Total		**816.4**	**100.0**

HS code = Harmonized System commodity code; NES = Not Elsewhere Specified

1. Commodity descriptions are drawn from the approved Harmonized System coding manual. They contain numerous spelling anomalies that have been left in original form in this table.
2. Refers to broadcasting and radar transmission and receiving equipment

Source: BC STATS and Statistics Canada

Detailed Table 16. Top 25 High Technology Import Commodities, 1999

HS Code	Commodity Description	Value ($000,000)	% Total Imports
847330	Parts and accessories of automatic data processing machines & units thereof	366.1	12.0
880240	Aircraft nes of an unladen weight exceeding 15,000 kg	212.5	7.0
903289	Automatic regulating or controlling instruments and apparatus, nes	186.3	6.1
880330	Aircraft parts nes	148.1	4.9
851790	Parts of electrical apparatus for line telephone or line telegraphy	135.5	4.5
852520	Transmission apparatus, for radio- teleph incorporating reception apparatus	134.4	4.4
852990	Parts suitable for use solely or princ with the app of headings 85.25 to 85.28	109.2	3.6
841199	Parts of gas turbines nes	92.7	3.1
901890	Instruments and appliances used in medical or veterinary sciences, nes	85.0	2.8
853400	Printed circuits	83.6	2.7
841191	Parts of turbo-jets or turbo-propellers	78.0	2.6
853710	Boards, panels, including numerical control panels, for a voltage ó 1,000 V	56.9	1.9
841112	Turbo-jets of a thrust exceeding 25 KN	56.6	1.9
852510	Transmission apparatus for radio-teleph radio-broadcasting or television	50.9	1.7
900110	Optical fibres, optical fibre bundles & cables,other than those of heading 85.44	50.1	1.6
880230	Aircraft nes of an unladen weight > 2,000 kg but not exceeding 15,000 kg	47.7	1.6
847990	Parts of machines & mechanical applian- ces nes having individual functions	44.3	1.5
852691	Radio navigational aid apparatus	37.3	1.2
903180	Measuring or checking instruments, appliances and machines, nes	35.4	1.2
841182	Gas turbines nes of a power exceeding 5000 KW	33.7	1.1
854140	Photosensitive semiconductor devices, photovoltaic cells & light emit diodes	32.2	1.1
854150	Semiconductor devices, nes	30.9	1.0
847989	Machines & mechanical appliances nes having individual functions	28.4	0.9
880520	Flight simulators and parts thereof	26.5	0.9
851730	Telephonic or telegraphic switching apparatus	24.5	0.8
Subtotal		**2,186.9**	**72.0**
	All Other High Technology Commodities	852.4	28.0
Total		**3,039.3**	**100.0**

HS code = Harmonized System commodity code; NES = Not Elsewhere Specified

1. Commodity descriptions are drawn from the approved Harmonized System coding manual. They contain numerous spelling anomalies that have been left in original form in this table
2. Refers to broadcasting and radar transmission and receiving equipment

Source: BC STATS and Statistics Canada

Detailed Table 17. Exports of High Technology Goods and Total Goods, by Destination, 1989-1999

	Value ($ million)										
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
High Technology Exports											
United States	181.7	168.3	184.8	327.3	342.9	367.7	399.9	348.8	424.8	614.8	680.5
Pacific Rim	61.9	38.6	41.2	64.6	88.5	86.8	101.2	109.9	117.8	99.4	69.9
Japan	*10.5*	*12.6*	*10.9*	*13.9*	*12.8*	*14.6*	*28.2*	*11.8*	*14.1*	*5.6*	*7.5*
Hong Kong	*3.7*	*2.0*	*5.3*	*18.4*	*17.8*	*20.4*	*29.9*	*13.9*	*21.7*	*34.1*	*9.6*
People's Republic of China	*7.1*	*4.0*	*6.8*	*11.9*	*8.2*	*11.2*	*3.9*	*19.9*	*28.0*	*26.9*	*8.1*
Taiwan	*2.5*	*1.8*	*1.3*	*3.3*	*6.5*	*3.6*	*5.5*	*8.1*	*14.4*	*17.5*	*23.9*
Australia	*4.0*	*3.3*	*2.9*	*3.9*	*4.0*	*4.7*	*3.5*	*2.9*	*2.8*	*2.5*	*3.7*
European Union (1996)	26.4	42.9	21.7	24.9	33.5	35.6	39.4	24.2	32.5	36.4	37.5
Netherlands	*0.8*	*1.2*	*4.3*	*2.8*	*2.0*	*5.6*	*7.6*	*2.1*	*7.0*	*7.2*	*4.9*
Germany	*2.0*	*3.1*	*3.2*	*5.3*	*6.0*	*6.8*	*5.5*	*2.6*	*1.7*	*6.6*	*5.1*
United Kingdom	*8.1*	*13.5*	*3.8*	*5.7*	*14.0*	*9.3*	*7.2*	*7.7*	*9.1*	*6.4*	*9.1*
France	*7.5*	*16.9*	*4.0*	*3.0*	*3.5*	*3.3*	*5.5*	*3.1*	*6.4*	*5.8*	*7.4*
All Other Countries	18.0	20.0	19.7	29.5	32.0	29.7	22.2	29.1	34.6	19.4	28.6
Total	**288.0**	**269.8**	**267.4**	**446.3**	**496.9**	**519.8**	**562.7**	**511.9**	**609.7**	**770.1**	**816.4**
Total Exports											
United States	7,814.7	6,979.8	6,617.9	7,993.2	10,061.0	12,354.6	13,293.3	13,895.1	14,863.1	16,375.0	19,400.0
Pacific Rim	7,155.6	6,372.7	5,779.5	5,842.1	6,887.2	7,897.6	9,861.4	9,225.7	9,023.4	6,969.2	6,875.2
Japan	*5,094.0*	*4,635.7*	*4,046.0*	*4,133.1*	*4,946.5*	*5,657.9*	*6,767.5*	*6,403.8*	*6,003.4*	*4,548.5*	*4,284.4*
Hong Kong	*115.6*	*90.7*	*94.1*	*125.3*	*149.1*	*191.5*	*270.6*	*258.3*	*352.0*	*272.2*	*257.1*
People's Republic of China	*217.6*	*199.9*	*228.9*	*244.3*	*284.3*	*305.2*	*499.5*	*514.1*	*455.5*	*464.8*	*587.5*
Taiwan	*325.4*	*240.0*	*262.5*	*265.0*	*347.3*	*360.9*	*482.2*	*354.3*	*457.3*	*399.6*	*361.2*
Australia	*358.5*	*271.4*	*224.3*	*221.7*	*224.1*	*261.8*	*298.4*	*243.2*	*235.9*	*226.3*	*209.0*
European Union	2,769.8	2,627.6	2,227.8	2,024.0	1,556.5	1,923.8	2,855.7	1,941.7	2,050.1	1,989.9	1,869.3
Netherlands	*161.6*	*201.6*	*188.7*	*151.8*	*135.1*	*99.3*	*184.7*	*164.1*	*204.3*	*251.5*	*235.2*
Germany	*575.3*	*517.6*	*448.5*	*427.6*	*349.6*	*465.7*	*694.2*	*409.1*	*475.6*	*395.3*	*298.2*
United Kingdom	*789.0*	*692.2*	*571.4*	*542.5*	*310.5*	*321.3*	*385.8*	*336.4*	*288.7*	*302.5*	*282.7*
France	*289.2*	*289.7*	*230.9*	*168.2*	*138.7*	*169.0*	*318.1*	*182.3*	*183.5*	*175.6*	*166.0*
All Other Countries	594.2	667.7	589.8	493.3	511.0	658.4	901.1	702.3	824.2	710.7	549.2
Total	**18,334.3**	**16,647.8**	**15,215.0**	**16,352.6**	**19,015.7**	**22,834.5**	**26,911.4**	**25,764.8**	**26,760.7**	**26,044.8**	**28,693.7**

Source: BC STATS and Statistics Canada

Detailed Table 17 (ctd). Exports of High Technology Goods and Total Goods, by Destination, 1989-1999

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
High Technology Exports										
United States	-7.4	9.8	77.1	4.8	7.2	8.8	-12.8	21.8	44.7	10.7
Pacific Rim	-37.6	6.8	56.6	37.1	-1.9	16.5	8.6	7.2	-15.6	-29.7
Japan	*20.6*	*-13.5*	*26.8*	*-7.6*	*14.3*	*92.6*	*-58.1*	*19.7*	*-60.7*	*35.6*
Hong Kong	*-45.0*	*160.8*	*249.0*	*-3.4*	*14.6*	*47.0*	*-53.5*	*55.7*	*57.4*	*-71.8*
People's Republic of China	*-43.3*	*69.7*	*74.4*	*-31.0*	*36.4*	*-65.1*	*406.5*	*40.5*	*-3.9*	*-69.9*
Taiwan	*-27.9*	*-27.6*	*160.8*	*93.8*	*-44.4*	*53.5*	*45.9*	*78.7*	*21.6*	*36.3*
Australia	*-17.2*	*-11.4*	*32.5*	*3.0*	*17.8*	*-24.3*	*-18.0*	*-2.4*	*-12.3*	*47.9*
European Union	62.5	-49.4	14.8	34.5	6.2	10.7	-38.6	34.1	12.2	2.9
Netherlands	*45.5*	*253.4*	*-35.0*	*-26.8*	*175.4*	*36.2*	*-72.4*	*230.0*	*4.0*	*-32.9*
Germany	*54.0*	*3.3*	*65.3*	*13.3*	*11.7*	*-18.4*	*-52.1*	*-36.7*	*292.5*	*-22.5*
United Kingdom	*66.5*	*-71.8*	*50.2*	*143.8*	*-33.5*	*-22.9*	*6.9*	*18.7*	*-29.9*	*42.7*
France	*123.8*	*-76.2*	*-24.5*	*15.6*	*-6.6*	*67.7*	*-43.7*	*106.0*	*-9.4*	*28.3*
All Other Countries	11.4	-1.7	50.0	8.2	-7.0	-25.4	31.2	19.0	-43.8	47.0
Total Growth	**-6.3**	**-0.9**	**66.9**	**11.3**	**4.6**	**8.3**	**-9.0**	**19.1**	**26.3**	**6.0**
Total Exports										
United States	-10.7	-5.2	20.8	25.9	22.8	7.6	4.5	7.0	10.2	18.5
Pacific Rim	-10.9	-9.3	1.1	17.9	14.7	24.9	-6.4	-2.2	-22.8	-1.3
Japan	*-9.0*	*-12.7*	*2.2*	*19.7*	*14.4*	*19.6*	*-5.4*	*-6.3*	*-24.2*	*-5.8*
Hong Kong	*-21.5*	*3.7*	*33.1*	*19.0*	*28.5*	*41.2*	*-4.5*	*36.3*	*-22.7*	*-5.5*
People's Republic of China	*-8.1*	*14.5*	*6.7*	*16.4*	*7.3*	*63.7*	*2.9*	*-11.4*	*2.0*	*26.4*
Taiwan	*-26.3*	*9.4*	*1.0*	*31.0*	*3.9*	*33.6*	*-26.5*	*29.1*	*-12.6*	*-9.6*
Australia	*-24.3*	*-17.3*	*-1.2*	*1.1*	*16.8*	*14.0*	*-18.5*	*-3.0*	*-4.1*	*-7.7*
European Union (1996)	-5.1	-15.2	-9.1	-23.1	23.6	48.4	-32.0	5.6	-2.9	-6.1
Netherlands	*24.7*	*-6.4*	*-19.5*	*-11.0*	*-26.4*	*85.9*	*-11.2*	*24.6*	*23.1*	*-6.5*
Germany	*-10.0*	*-13.4*	*-4.7*	*-18.3*	*33.2*	*49.1*	*-41.1*	*16.2*	*-16.9*	*-24.6*
United Kingdom	*-12.3*	*-17.4*	*-5.1*	*-42.8*	*3.5*	*20.1*	*-12.8*	*-14.2*	*4.8*	*-6.5*
France	*0.2*	*-20.3*	*-27.1*	*-17.5*	*21.8*	*88.2*	*-42.7*	*0.6*	*-4.3*	*-5.5*
All Other Countries	12.4	-11.7	-16.4	3.6	28.9	36.9	-22.1	17.3	-13.8	-22.7
Total Growth	**-9.2**	**-8.6**	**7.5**	**16.3**	**20.1**	**17.9**	**-4.3**	**3.9**	**-2.7**	**10.2**

Source: BC STATS and Statistics Canada

Detailed Table 18. Imports of High Technology, by Country of Origin, 1989-1999

	Value ($ million)										
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
High Technology Imports											
United States	948.2	993.3	1,021.3	1,161.0	1,268.7	1,521.4	1,737.8	1,240.4	1,449.2	1,695.0	1,868.8
Pacific Rim	225.0	227.9	257.9	295.8	363.7	460.9	552.4	253.4	272.5	342.5	421.5
Japan	*137.0*	*136.5*	*155.9*	*167.3*	*189.9*	*212.9*	*254.6*	*106.7*	*119.1*	*142.4*	*173.9*
Hong Kong	*8.3*	*8.7*	*9.7*	*10.7*	*12.1*	*11.8*	*13.6*	*6.0*	*7.4*	*9.7*	*8.9*
People's Republic of China	*1.2*	*1.9*	*2.8*	*5.0*	*8.5*	*16.2*	*23.1*	*18.6*	*24.9*	*34.6*	*50.9*
Taiwan	*25.4*	*25.2*	*29.2*	*39.4*	*52.0*	*59.3*	*62.4*	*37.9*	*50.2*	*60.9*	*69.7*
Australia	*4.6*	*4.6*	*2.5*	*3.4*	*3.3*	*5.4*	*6.1*	*7.5*	*6.3*	*3.4*	*4.5*
European Union (1996)	194.1	202.8	259.7	286.3	269.6	307.9	435.1	381.9	576.5	434.1	546.4
Netherlands	*22.6*	*11.7*	*8.4*	*6.7*	*8.6*	*14.9*	*20.4*	*10.2*	*8.4*	*10.4*	*13.1*
Germany	*34.8*	*37.9*	*50.3*	*49.2*	*61.8*	*75.5*	*68.5*	*62.6*	*83.3*	*61.1*	*86.5*
United Kingdom	*68.2*	*43.4*	*42.8*	*51.9*	*54.5*	*68.6*	*121.5*	*100.1*	*87.3*	*111.2*	*158.2*
France	*22.9*	*56.5*	*99.1*	*110.3*	*53.4*	*39.0*	*69.4*	*74.4*	*245.9*	*164.6*	*190.9*
All Other Countries	94.3	82.6	88.4	96.6	118.3	147.5	178.2	136.9	129.4	128.7	202.6
Total Value	**1,461.7**	**1,506.6**	**1,627.3**	**1,839.7**	**2,020.4**	**2,437.8**	**2,903.5**	**2,012.5**	**2,427.6**	**2,600.4**	**3,039.3**

	% change from previous year									
	1990	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
High Technology Imports										
United States	4.8	2.8	13.7	9.3	19.9	14.2	-28.6	16.8	17.0	10.3
Pacific Rim	1.3	13.2	14.7	23.0	26.7	19.8	-54.1	7.5	25.7	23.1
Japan	*-0.4*	*14.2*	*7.3*	*13.5*	*12.1*	*19.5*	*-58.1*	*11.6*	*19.5*	*22.2*
Hong Kong	*4.8*	*11.8*	*10.7*	*12.3*	*-2.1*	*15.0*	*-55.5*	*23.1*	*30.4*	*-8.2*
People's Republic of China	*61.5*	*46.8*	*79.8*	*70.6*	*89.4*	*43.0*	*-19.5*	*33.9*	*38.5*	*47.4*
Taiwan	*-0.7*	*15.7*	*34.8*	*32.2*	*14.1*	*5.1*	*-39.2*	*32.4*	*21.2*	*14.5*
Australia	*0.0*	*-46.2*	*35.7*	*-2.5*	*62.6*	*14.7*	*21.3*	*-15.5*	*-46.6*	*32.9*
European Union	4.5	28.1	10.2	-5.8	14.2	41.3	-12.2	51.0	-24.7	25.9
Netherlands	*-48.2*	*-28.2*	*-20.5*	*28.7*	*73.1*	*37.3*	*-49.8*	*-17.6*	*22.6*	*26.5*
Germany	*8.9*	*32.8*	*-2.2*	*25.5*	*22.1*	*-9.3*	*-8.6*	*33.2*	*-26.7*	*41.6*
United Kingdom	*-36.3*	*-1.5*	*21.4*	*4.9*	*26.0*	*77.1*	*-17.6*	*-12.8*	*27.4*	*42.3*
France	*146.4*	*75.3*	*11.3*	*-51.5*	*-26.9*	*77.8*	*7.3*	*230.2*	*-33.0*	*16.0*
All Other Countries	-12.4	7.0	9.3	22.5	24.7	20.8	-23.2	-5.4	-0.5	57.4
Total Growth	**3.1**	**8.0**	**13.1**	**9.8**	**20.7**	**19.1**	**-30.7**	**20.6**	**7.1**	**16.9**

Source: BC STATS and Statistics Canada

Detailed Table 19. Balance of Trade in High Technology Goods, by Country, 1989-1999

	Balance ($ million)										
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
High Technology Commodities											
United States	-766.5	-825.0	-836.6	-833.8	-925.9	-1,153.8	-1,337.8	-891.6	-1,024.4	-1,080.3	-1,188.3
Pacific Rim	-163.1	-189.3	-216.7	-231.2	-275.3	-374.1	-451.3	-143.5	-154.7	-243.1	-351.6
Japan	*-126.6*	*-123.9*	*-145.0*	*-153.4*	*-177.1*	*-198.3*	*-226.4*	*-94.9*	*-105.0*	*-136.8*	*-166.4*
Hong Kong	*-4.6*	*-6.7*	*-4.4*	*7.7*	*5.7*	*8.5*	*16.3*	*7.9*	*14.2*	*24.4*	*0.7*
People's Republic of China	*5.9*	*2.1*	*4.1*	*6.9*	*-0.3*	*-4.9*	*-19.2*	*1.3*	*3.0*	*-7.7*	*-42.9*
Taiwan	*-23.0*	*-23.5*	*-27.9*	*-36.0*	*-45.5*	*-55.7*	*-56.8*	*-29.8*	*-35.8*	*-43.3*	*-45.8*
Australia	*-0.7*	*-1.3*	*0.4*	*0.5*	*0.7*	*-0.7*	*-2.6*	*-4.6*	*-3.5*	*-0.9*	*-0.8*
European Union (1996)	-167.7	-159.9	-238.0	-261.4	-236.1	-272.3	-395.6	-357.6	-544.0	-397.7	-508.9
Netherlands	*-21.7*	*-10.5*	*-4.1*	*-3.9*	*-6.6*	*-9.3*	*-12.8*	*-8.1*	*-1.5*	*-3.1*	*-8.2*
Germany	*-32.8*	*-34.8*	*-47.1*	*-43.9*	*-55.7*	*-68.7*	*-63.0*	*-59.9*	*-81.7*	*-54.6*	*-81.4*
United Kingdom	*-60.1*	*-29.9*	*-38.9*	*-46.2*	*-40.5*	*-59.3*	*-114.3*	*-92.5*	*-78.2*	*-104.8*	*-149.1*
France	*-15.4*	*-39.6*	*-95.0*	*-107.2*	*-49.9*	*-35.8*	*-63.9*	*-71.4*	*-239.5*	*-158.9*	*-183.5*
All Other Countries	-76.4	-62.6	-68.7	-67.1	-86.4	-117.8	-156.0	-107.8	-94.8	-109.3	-174.0
Total	**-1,173.7**	**-1,236.7**	**-1,360.0**	**-1,393.5**	**-1,523.6**	**-1,918.0**	**-2,340.8**	**-1,500.6**	**-1,817.9**	**-1,830.3**	**-2,222.9**

Source: BC STATS and Statistics Canada

Detailed Table 20. Exports of High Technology Goods, by Commodity Group, 1989-1999

Value ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	133.7	118.8	139.7	270.3	273.0	279.7	272.3	245.1	278.6	301.9	229.9
Computer Integrated Manufacturing	41.9	30.9	34.7	52.8	67.9	78.4	88.8	90.3	112.6	117.8	116.3
Aerospace	73.2	77.3	35.8	25.4	40.6	25.6	55.2	53.7	54.7	104.1	129.1
Electronics	7.5	8.7	17.1	35.9	45.3	67.3	71.2	64.6	62.1	74.1	77.8
Material Design	4.5	6.8	9.8	21.1	24.1	22.6	18.5	0.9	13.7	57.7	94.0
Life Sciences	17.4	18.1	19.0	27.1	24.5	24.1	26.5	29.4	47.4	57.0	73.8
Opto-Electronics	8.2	8.0	8.6	12.2	19.5	19.7	25.5	24.6	35.9	51.1	90.7
Weapons and Nuclear	1.6	1.0	2.0	0.9	0.7	1.1	2.6	2.5	4.0	4.5	2.6
Biotechnology	0.0	0.3	0.7	0.6	1.3	1.4	2.0	0.8	0.7	2.0	2.3
Total	**288.0**	**269.9**	**267.4**	**446.3**	**496.9**	**519.8**	**562.7**	**511.9**	**609.7**	**770.1**	**816.4**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-11.2	17.6	93.5	1.0	2.4	-2.6	-10.0	13.7	8.4	-23.9
Computer Integrated Manufacturing	-26.2	12.0	52.4	28.5	15.6	13.2	1.7	24.7	4.6	-1.3
Aerospace	5.6	-53.7	-29.0	59.8	-36.9	115.7	-2.7	1.9	90.5	24.0
Electronics	16.0	97.4	109.8	26.3	48.4	5.9	-9.3	-3.8	19.2	5.0
Material Design	51.9	44.7	113.7	14.5	-6.4	-18.0	-94.9	1351.2	321.9	63.0
Life Sciences	4.4	5.0	42.5	-9.7	-1.6	10.2	10.8	61.0	20.4	29.4
Opto-Electronics	-3.0	7.2	42.1	59.8	1.4	29.4	-3.7	45.9	42.3	77.6
Weapons and Nuclear	-34.1	91.6	-54.5	-18.7	48.7	132.7	-3.4	62.9	10.8	-41.1
Biotechnology	2963.1	177.6	-15.7	113.5	8.8	45.8	-60.5	-10.8	179.2	15.0
Total	**-6.3**	**-0.9**	**66.9**	**11.3**	**4.6**	**8.3**	**-9.0**	**19.1**	**26.3**	**6.0**

Source: BC STATS and Statistics Canada

Detailed Table 21. Imports of High Technology Goods, by Commodity Group, 1989-1999

Value ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	634.2	643.3	705.0	836.2	995.1	1,195.7	1,374.5	593.9	656.4	834.1	949.6
Computer Integrated Manufacturing	152.3	145.9	154.0	147.1	206.5	260.7	307.7	286.9	392.1	350.7	380.9
Aerospace	292.3	270.5	317.9	347.5	233.5	234.7	334.5	423.3	616.3	636.4	778.5
Electronics	97.9	126.4	132.0	144.2	161.9	225.1	291.1	100.9	115.2	222.4	263.3
Material Design	4.7	6.1	6.4	11.1	10.3	16.7	18.1	24.8	22.5	44.2	74.0
Life Sciences	223.8	251.0	256.2	283.8	331.6	398.3	476.2	472.7	509.4	325.2	392.8
Opto-Electronics	15.1	16.5	13.3	18.7	20.3	22.8	23.6	22.2	31.3	88.9	99.2
Weapons and Nuclear	28.5	32.0	26.1	30.5	34.1	50.6	45.9	55.5	52.1	56.3	55.5
Biotechnology	12.9	14.8	16.4	20.7	27.1	33.2	32.0	32.3	32.4	42.2	45.6
Total	**1,461.7**	**1,506.6**	**1,627.3**	**1,839.7**	**2,020.4**	**2,437.8**	**2,903.5**	**2,012.5**	**2,427.6**	**2,600.4**	**3,039.3**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	1.4	9.6	18.6	19.0	20.2	15.0	-56.8	10.5	27.1	13.9
Computer Integrated Manufacturing	-4.2	5.6	-4.5	40.4	26.2	18.0	-6.8	36.7	-10.6	8.6
Aerospace	-7.5	17.5	9.3	-32.8	0.5	42.5	26.5	45.6	3.3	22.3
Electronics	29.1	4.5	9.3	12.3	39.1	29.3	-65.4	14.3	92.9	18.4
Material Design	32.1	3.7	74.3	-7.2	62.1	8.2	36.9	-9.1	96.3	67.3
Life Sciences	12.1	2.1	10.8	16.9	20.1	19.5	-0.7	7.8	-36.2	20.8
Opto-Electronics	9.4	-19.5	41.0	8.4	12.1	3.6	-5.9	41.1	184.1	11.5
Weapons and Nuclear	12.2	-18.6	16.9	12.0	48.2	-9.2	20.9	-6.2	8.1	-1.3
Biotechnology	14.8	10.9	26.0	30.8	22.7	-3.6	0.9	0.2	30.5	7.9
Total	**3.1**	**8.0**	**13.1**	**9.8**	**20.7**	**19.1**	**-30.7**	**20.6**	**7.1**	**16.9**

Source: BC STATS and Statistics Canada

Detailed Table 22. Balance of Trade in High Technology Goods, by Commodity Group, 1989-1999

	Balance ($ million)										
	1989	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**
Computers and Telecommunications	-500.5	-524.5	-565.3	-565.8	-722.1	-916.0	-1,102.1	-348.8	-377.8	-532.2	-719.8
Computer Integrated Manufacturing	-110.4	-115.0	-119.4	-94.3	-138.6	-182.2	-218.9	-196.6	-279.5	-233.0	-264.6
Aerospace	-219.2	-193.3	-282.2	-322.1	-192.9	-209.1	-279.3	-369.6	-561.6	-532.3	-649.4
Electronics	-90.4	-117.7	-114.9	-108.3	-116.6	-157.9	-219.9	-36.3	-53.1	-148.3	-185.5
Material Design	-0.2	0.7	3.5	9.9	13.8	5.8	0.4	-23.8	-8.9	13.4	20.0
Life Sciences	-206.5	-232.8	-237.2	-256.7	-307.2	-374.3	-449.6	-443.3	-462.0	-268.1	-319.0
Opto-Electronics	-6.8	-8.5	-4.7	-6.5	-0.8	-3.0	2.0	2.4	4.6	-37.8	-8.4
Weapons and Nuclear	-26.9	-31.0	-24.1	-29.6	-33.4	-49.5	-43.3	-53.0	-48.0	-51.8	-52.9
Biotechnology	-12.9	-14.5	-15.7	-20.1	-25.8	-31.8	-30.0	-31.5	-31.7	-40.3	-43.3
Total	**-1,173.7**	**-1,236.7**	**-1,360.0**	**-1,393.5**	**-1,523.6**	**-1,918.0**	**-2,340.8**	**-1,500.6**	**-1,817.9**	**-1,830.3**	**-2,222.9**

Source: BC STATS and Statistics Canada

Detailed Table 23. Exports of High Technology Goods to the United States, by Commodity Group, 1989-1999

Value ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	89.6	75.3	91.7	203.1	186.4	187.6	171.5	141.0	164.8	207.8	164.8
Computer Integrated Manufacturing	28.7	20.0	22.2	22.6	35.3	47.6	57.1	67.8	70.0	91.9	89.8
Aerospace	36.9	46.7	29.0	22.2	28.0	21.3	49.4	41.6	49.1	97.1	122.6
Electronics	6.4	7.3	16.1	33.9	42.3	56.3	65.9	56.7	57.8	69.1	66.9
Material Design	3.7	5.7	7.6	20.9	23.6	21.7	18.2	0.8	13.7	57.3	93.9
Life Sciences	10.7	8.8	10.9	16.4	14.9	17.2	16.8	23.3	40.4	46.7	63.5
Opto-Electronics	4.7	3.6	5.4	7.4	11.6	14.7	19.8	16.3	25.0	40.1	77.2
Weapons and Nuclear	0.8	0.7	1.3	0.2	0.1	0.5	0.8	0.7	3.5	4.2	1.1
Biotechnology	0.0	0.2	0.6	0.5	0.7	0.8	0.4	0.6	0.6	0.7	0.6
Total	**181.7**	**168.3**	**184.7**	**327.3**	**342.9**	**367.7**	**399.9**	**348.8**	**424.8**	**614.8**	**680.5**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-16.0	21.7	121.6	-8.2	0.6	-8.6	-17.8	16.9	26.1	-20.7
Computer Integrated Manufacturing	-30.3	11.0	1.6	56.3	34.6	20.1	18.6	3.3	31.3	-2.2
Aerospace	26.7	-37.9	-23.4	25.8	-23.9	131.9	-15.7	18.0	97.6	26.2
Electronics	13.2	121.2	110.4	24.7	33.1	17.2	-14.0	1.9	19.6	-3.1
Material Design	53.2	31.7	175.9	12.9	-7.7	-16.2	-95.8	1666.4	319.3	63.9
Life Sciences	-18.2	23.9	51.1	-9.1	15.3	-2.2	38.4	73.7	15.5	36.0
Opto-Electronics	-24.3	50.8	37.4	55.5	27.1	34.9	-17.6	52.7	60.6	92.6
Weapons and Nuclear	-15.6	84.8	-86.1	-27.2	289.1	61.4	-16.0	415.4	18.8	-72.5
Biotechnology		212.3	-10.6	35.8	9.0	-54.5	70.4	-0.5	10.5	-16.6
Total	**-7.4**	**9.7**	**77.2**	**4.8**	**7.2**	**8.8**	**-12.8**	**21.8**	**44.7**	**10.7**

Source: BC STATS and Statistics Canada

Detailed Table 24. Imports of High Technology Goods from the United States, by Commodity Group, 1989-1999

Value ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	417.7	420.7	452.8	543.7	635.5	751.7	877.9	386.0	439.7	568.9	554.9
Computer Integrated Manufacturing	99.8	94.3	10.4	103.7	146.7	191.3	198.9	195.9	283.2	272.0	298.9
Aerospace	205.3	188.7	194.0	217.6	156.9	174.9	234.8	292.8	300.9	355.4	408.9
Electronics	65.3	92.6	77.6	85.2	86.9	113.0	142.6	72.6	82.7	146.1	177.2
Material Design	4.1	5.7	5.6	10.3	9.2	15.8	15.5	22.8	20.8	39.3	64.9
Life Sciences	119.7	148.9	146.9	155.6	177.1	204.6	205.8	209.4	256.3	210.3	251.3
Opto-Electronics	10.2	11.5	8.8	11.3	12.8	14.3	14.5	13.0	17.3	44.6	51.4
Weapons and Nuclear	16.2	19.3	17.8	17.4	22.5	30.0	26.2	29.5	27.9	32.2	29.5
Biotechnology	9.8	11.6	13.3	16.1	21.2	25.7	21.5	18.4	20.5	26.2	31.8
Total	**948.2**	**993.3**	**927.3**	**1,161.0**	**1,268.7**	**1,521.4**	**1,737.8**	**1,240.4**	**1,449.2**	**1,695.0**	**1,868.8**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	0.7	7.6	20.1	16.9	18.3	16.8	-56.0	13.9	29.4	-2.5
Computer Integrated Manufacturing	-5.5	-88.9	893.0	41.5	30.4	3.9	-1.5	44.6	-4.0	9.9
Aerospace	-8.1	2.8	12.2	-27.9	11.5	34.3	24.7	2.8	18.1	15.1
Electronics	41.8	-16.2	9.7	2.0	30.0	26.2	-49.1	13.9	76.7	21.3
Material Design	38.6	-2.1	83.3	-10.5	71.3	-1.7	46.6	-8.7	88.9	65.3
Life Sciences	24.4	-1.3	5.9	13.8	15.6	0.6	1.7	22.4	-17.9	19.5
Opto-Electronics	12.2	-23.1	28.1	13.3	11.7	1.6	-10.3	33.0	157.9	15.1
Weapons and Nuclear	18.9	-7.4	-2.2	28.7	33.7	-12.7	12.4	-5.5	15.4	-8.3
Biotechnology	18.6	14.1	21.6	31.1	21.3	-16.3	-14.3	11.1	27.9	21.5
Total	**4.8**	**-6.6**	**25.2**	**9.3**	**19.9**	**14.2**	**-28.6**	**16.8**	**17.0**	**10.3**

Source: BC STATS and Statistics Canada

Detailed Table 25. Balance of Trade in High Technology Goods with the United States, by Commodity Group, 1989-1999

Balance ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-328.0	-345.4	-361.1	-340.6	-449.1	-564.1	-706.4	-245.1	-275.0	-361.1	-390.1
Computer Integrated Manufacturing	-71.0	-74.2	11.8	-81.1	-111.4	-143.8	-141.7	-128.1	-213.2	-180.1	-209.1
Aerospace	-168.4	-142.0	-164.9	-195.3	-128.9	-153.6	-185.4	-251.1	-251.7	-258.2	-286.4
Electronics	-58.9	-85.3	-61.5	-51.3	-44.6	-56.7	-76.7	-15.9	-24.9	-77.0	-110.3
Material Design	-0.4	0.0	1.9	10.5	14.3	5.9	2.7	-22.0	-7.1	18.0	29.0
Life Sciences	-109.0	-140.2	-136.1	-139.2	-162.2	-187.5	-189.0	-186.1	-215.9	-163.7	-187.8
Opto-Electronics	-5.5	-7.9	-3.4	-3.8	-1.2	0.4	5.3	3.3	7.7	-4.5	25.8
Weapons and Nuclear	-15.4	-18.6	-16.6	-17.3	-22.3	-29.5	-25.4	-28.8	-24.4	-28.0	-28.3
Biotechnology	-9.8	-11.4	-12.7	-15.6	-20.4	-24.9	-21.1	-17.8	-19.9	-25.5	-31.3
Total	**-766.5**	**-825.0**	**-742.6**	**-833.8**	**-925.9**	**-1,153.8**	**-1,337.8**	**-891.6**	**-1,024.4**	**-1,080.3**	**-1,188.3**

Source: BC STATS and Statistics Canada

Detailed Table 26. Exports of High Technology Goods to the Pacific Rim, by Commodity Group, 1989-1999

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	21.7	16.4	23.4	36.6	57.3	52.1	67.7	85.0	90.3	78.2	45.4
Computer Integrated Manufacturing	8.5	7.2	8.0	14.1	18.3	21.7	19.9	9.7	17.9	13.0	12.6
Aerospace	25.1	5.4	0.6	1.4	2.4	1.9	1.6	2.7	2.6	2.1	1.6
Electronics	0.6	0.7	0.6	1.1	1.1	4.3	3.0	5.3	1.5	1.9	4.2
Material Design	0.4	0.9	2.3	0.2	0.5	0.6	0.3	0.1	0.0	0.1	0.0
Life Sciences	4.0	6.4	4.8	7.7	6.5	4.3	6.9	3.9	3.5	2.7	3.6
Opto-Electronics	1.0	1.4	1.3	2.9	2.0	1.7	1.4	2.3	1.6	1.3	2.1
Weapons and Nuclear	0.6	0.2	0.3	0.6	0.3	0.2	0.3	0.6	0.4	0.1	0.4
Biotechnology	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.2	0.0	0.0	0.0
Total	**61.9**	**38.6**	**41.2**	**64.6**	**88.5**	**86.8**	**101.2**	**109.9**	**117.8**	**99.4**	**69.9**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-24.5	42.6	56.4	56.7	-9.1	30.1	25.5	6.2	-13.3	-42.0
Computer Integrated Manufacturing	-14.5	10.7	75.8	29.7	18.7	-8.2	-51.5	84.9	-27.3	-2.9
Aerospace	-78.6	-89.6	143.8	73.5	-19.9	-15.3	71.0	-4.6	-20.1	-24.0
Electronics	15.1	-20.0	79.2	1.2	297.4	-29.5	74.7	-71.2	21.7	123.4
Material Design	123.3	154.1	-92.1	207.1	10.9	-57.3	-50.7	-96.7	2707.5	-100.0
Life Sciences	58.6	-25.3	61.9	-15.4	-34.5	60.4	-43.0	-9.7	-23.5	33.4
Opto-Electronics	37.5	-4.6	121.7	-31.9	-16.3	-18.6	66.0	-31.0	-13.6	55.0
Weapons and Nuclear	-69.9	76.0	86.1	-49.8	-28.9	49.8	108.0	-34.6	-82.7	465.3
Biotechnology	326.5	1.0	154.5	100.5	15.4	-40.8	165.8	-100.0	-	-
Total	**-37.6**	**6.8**	**56.6**	**37.1**	**-1.9**	**16.5**	**8.6**	**7.2**	**-15.6**	**-29.7**

Source: BC STATS and Statistics Canada

Detailed Table 27. Imports of High Technology Goods from the Pacific Rim, by Commodity Group, 1989-1999

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	156.2	163.4	189.7	220.6	265.2	327.6	363.6	134.1	144.3	174.5	232.3
Computer Integrated Manufacturing	26.4	22.1	24.3	18.9	28.9	31.1	43.5	39.8	49.7	31.5	27.0
Aerospace	2.0	2.3	2.9	2.0	2.5	2.2	2.6	4.5	5.9	15.6	25.6
Electronics	12.5	12.9	17.0	22.0	34.1	56.8	90.7	18.0	22.7	55.3	57.1
Material Design	0.2	0.2	0.2	0.5	0.5	0.5	1.5	0.7	0.5	1.3	4.6
Life Sciences	19.5	18.7	18.2	22.0	22.3	33.1	38.3	42.7	33.1	22.3	32.6
Opto-Electronics	2.4	2.6	2.7	5.8	5.3	4.9	6.0	5.8	9.4	35.4	34.9
Weapons and Nuclear	5.1	5.1	2.6	3.8	4.0	4.0	6.0	7.2	6.6	5.3	5.2
Biotechnology	0.7	0.6	0.4	0.4	0.9	0.6	0.4	0.5	0.3	1.3	2.2
Total	**225.0**	**227.9**	**257.9**	**295.8**	**363.7**	**460.9**	**552.4**	**253.4**	**272.5**	**342.5**	**421.5**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	4.6	16.1	16.3	20.2	23.5	11.0	-63.1	7.6	20.9	33.2
Computer Integrated Manufacturing	-16.5	9.8	-22.2	53.3	7.5	39.7	-8.3	24.8	-36.6	-14.3
Aerospace	-4.1	-2.6	20.6	1.4	48.8	15.4	11.7	-22.5	-32.6	63.5
Electronics	2.7	32.5	29.0	55.2	66.4	59.7	-80.2	26.1	144.0	3.3
Material Design	16.1	25.1	-31.8	30.2	-14.0	18.3	75.7	28.9	167.0	250.6
Life Sciences	9.3	3.2	114.7	-7.7	-7.3	20.5	-1.8	60.9	276.1	45.9
Opto-Electronics	-22.1	27.3	118.8	-0.6	-4.3	222.5	-54.2	-24.1	161.7	-1.5
Weapons and Nuclear	-0.1	-50.1	48.4	4.5	1.9	47.5	20.3	-8.2	-20.2	-1.3
Biotechnology	-6.0	-33.6	-3.2	118.0	-24.7	-36.8	11.4	-33.4	328.2	70.7
Total	**1.3**	**13.2**	**14.7**	**23.0**	**26.7**	**19.8**	**-54.1**	**7.5**	**25.7**	**23.1**

Source: BC STATS and Statistics Canada

Detailed Table 28. Balance of Trade in High Technology Goods with the Pacific Rim, by Commodity Group, 1989-1999

Balance ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-134.5	-147.0	-166.3	-184.0	-207.9	-275.5	-295.9	-49.1	-54.1	-96.2	-186.9
Computer Integrated Manufacturing	-18.0	-14.8	-16.2	-4.8	-10.7	-9.4	-23.5	-30.2	-31.8	-18.5	-14.4
Aerospace	23.1	3.1	-2.3	-0.6	-0.2	-0.3	-1.0	-1.8	-3.2	-13.6	-24.0
Electronics	-11.9	-12.1	-16.5	-20.9	-33.1	-52.5	-87.7	-12.7	-21.1	-53.5	-53.0
Material Design	0.2	0.7	2.0	-0.3	0.1	0.2	-1.2	-0.5	-0.5	-1.2	-4.6
Life Sciences	-15.4	-12.3	-13.4	-14.2	-15.7	-28.8	-31.4	-38.8	-29.6	-19.6	-29.0
Opto-Electronics	-1.4	-1.2	-1.4	-2.8	-3.3	-3.3	-4.6	-3.6	-7.9	-34.1	-32.8
Weapons and Nuclear	-4.5	-5.0	-2.2	-3.2	-3.7	-3.8	-5.7	-6.5	-6.2	-5.2	-4.8
Biotechnology	-0.6	-0.6	-0.4	-0.3	-0.8	-0.5	-0.3	-0.3	-0.3	-1.3	-2.2
Total	**-163.1**	**-189.3**	**-216.7**	**-231.2**	**-275.3**	**-374.1**	**-451.3**	**-143.5**	**-154.7**	**-243.1**	**-351.6**

Source: BC STATS and Statistics Canada

Detailed Table 29. Exports of High Technology Goods to Japan, by Commodity Group, 1989-1999

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	2.0	3.2	4.7	4.5	5.6	0.7	12.8	6.0	8.3	1.9	1.6
Computer Integrated Manufacturing	3.2	2.3	2.4	3.1	3.1	0.6	10.1	1.9	3.2	1.4	1.9
Aerospace	1.0	0.2	0.0	0.2	0.3	0.0	0.1	0.3	0.3	0.9	0.8
Electronics	0.1	0.0	0.0	0.1	0.1	6.7	0.9	1.0	0.5	0.4	1.1
Material Design	0.4	0.8	0.0	0.2	0.0	3.9	0.0	0.0	0.0	0.0	0.0
Life Sciences	3.2	5.6	3.5	5.1	3.0	0.0	3.9	1.6	1.3	0.7	1.5
Opto-Electronics	0.6	0.4	0.3	0.7	0.6	2.1	0.4	0.5	0.2	0.2	0.5
Weapons and Nuclear	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.3	0.3	0.0	0.1
Biotechnology	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	**10.5**	**12.6**	**10.9**	**13.9**	**12.8**	**14.6**	**28.2**	**11.8**	**14.1**	**5.6**	**7.5**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	62.5	46.2	-4.3	25.2	-87.8	1784.6	-52.9	37.0	-76.9	-14.3
Computer Integrated Manufacturing	-29.1	4.8	31.0	0.0	-81.3	1616.4	-80.7	66.9	-58.0	39.0
Aerospace	-81.9	-86.5	811.8	59.4	-100.0		352.0	18.1	169.8	-17.9
Electronics	-61.4	-71.3	476.9	-6.7	11156.0	-85.9	10.4	-49.1	-21.9	170.7
Material Design	104.5	-98.5	1489.4	-100.0		-99.9	-100.0			
Life Sciences	74.4	-37.9	45.8	-40.8	-100.0		-58.3	-22.1	-45.0	114.9
Opto-Electronics	-22.0	-35.0	132.4	-12.4	265.4	-83.5	48.6	-56.3	-26.1	183.7
Weapons and Nuclear	53.5	-67.8	-14.8	190.3	-100.0		807.2	-22.5	-95.3	1039.2
Biotechnology	269.4	-100.0					588.7	-100.0		
Total	**20.6**	**-13.5**	**26.8**	**-7.6**	**14.3**	**92.6**	**-58.1**	**19.7**	**-60.7**	**35.6**

Source: BC STATS and Statistics Canada

Detailed Table 30. Imports of High Technology Goods from Japan, by Commodity Group, 1989-1999[1]

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	92.4	98.1	110.9	120.6	130.9	142.8	156.0	43.7	42.9	51.1	69.5
Computer Integrated Manufacturing	22.5	18.2	21.6	16.1	25.4	26.3	36.5	33.4	41.8	25.5	20.9
Aerospace	0.9	1.2	1.0	1.2	0.9	0.6	0.8	2.3	3.6	12.8	21.5
Electronics	4.8	4.2	7.9	9.0	12.2	24.2	39.1	7.7	8.9	18.1	18.3
Material Design	0.1	0.1	0.2	0.4	0.4	0.4	1.3	0.5	0.4	1.0	3.6
Life Sciences	12.9	11.5	10.9	13.8	14.1	13.6	15.4	13.7	14.3	12.2	16.8
Opto-Electronics	1.9	1.9	2.0	4.6	3.8	3.1	3.8	4.0	5.7	19.8	21.2
Weapons and Nuclear	0.4	0.9	1.2	1.2	1.4	1.3	1.5	1.1	1.3	1.8	1.7
Biotechnology	0.5	0.4	0.4	0.3	0.8	0.6	0.2	0.4	0.2	0.1	0.3
Total	**136.4**	**136.5**	**155.9**	**167.3**	**189.9**	**212.9**	**254.6**	**106.7**	**119.1**	**142.4**	**173.9**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	6.2	13.0	8.8	8.6	9.0	9.2	-72.0	-1.8	19.1	36.0
Computer Integrated Manufacturing	-19.0	18.3	-25.5	57.9	3.7	38.6	-8.5	25.3	-39.1	-18.0
Aerospace	-10.9	-5.2	27.2	1.8	-3.2	12.9	-10.7	4.3	-14.9	38.3
Electronics	-12.5	89.3	13.6	36.5	98.0	61.3	-80.4	15.5	104.9	1.0
Material Design	28.4	-17.7	19.8	-22.8	-31.8	37.2	170.8	56.3	255.6	68.9
Life Sciences	4.3	4.0	129.8	-18.9	-16.9	20.1	5.5	43.2	249.0	7.1
Opto-Electronics	4.2	66.4	156.9	-2.9	-10.0	239.8	-64.4	-5.6	120.8	266.5
Weapons and Nuclear	102.3	36.1	4.1	18.2	-8.5	16.6	-27.0	19.6	38.3	-6.6
Biotechnology	-12.9	-18.3	-6.2	124.2	-25.9	-60.1	74.6	-57.9	-53.1	262.1
Total	**0.1**	**14.2**	**7.3**	**13.5**	**12.1**	**19.6**	**-58.1**	**11.6**	**19.5**	**22.2**

Source: BC STATS and Statistics Canada

Detailed Table 31. Balance of Trade in High Technology Goods with Japan, by Commodity Group, 1989-1999

Balance ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-20.6	-15.0	-16.9	-11.6	-19.8	-25.7	-23.7	-37.6	-34.6	-49.2	-67.8
Computer Integrated Manufacturing	-89.2	-95.8	-108.5	-117.4	-127.8	-142.2	-145.9	-31.5	-38.6	-24.1	-19.0
Aerospace	0.0	-1.0	-1.0	-1.0	-0.6	-0.6	-0.8	-2.0	-3.2	-11.8	-20.8
Electronics	-4.7	-4.1	-7.9	-8.9	-12.2	-17.5	-38.1	-6.6	-8.3	-17.7	-17.2
Material Design	0.3	0.7	-0.2	-0.3	-0.4	3.5	-1.3	-0.5	-0.4	-0.9	-3.6
Life Sciences	-9.6	-5.8	-7.3	-8.7	-11.0	-13.6	-11.5	-12.1	-13.0	-11.5	-15.3
Opto-Electronics	-1.3	-1.5	-1.7	-4.0	-3.2	-1.0	-3.4	-3.4	-5.5	-19.7	-20.8
Weapons and Nuclear	-0.4	-0.8	-1.1	-1.2	-1.4	-1.3	-1.5	-0.8	-1.1	-1.8	-1.6
Biotechnology	-0.5	-0.4	-0.4	-0.3	-0.8	-0.6	-0.2	-0.4	-0.2	-0.1	-0.3
Total	**-125.9**	**-123.9**	**-145.0**	**-153.4**	**-177.1**	**-198.3**	**-226.4**	**-94.9**	**-105.0**	**-136.8**	**-166.4**

Source: BC STATS and Statistics Canada

Detailed Table 32. Exports of High Technology Goods to the Pacific Rim (excluding Japan), 1989-1999

Value ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	19.7	13.2	18.7	32.1	51.7	51.4	54.9	79.0	82.0	76.3	43.8
Computer Integrated Manufacturing	5.2	5.0	5.6	11.0	15.1	21.1	9.9	7.7	14.6	11.6	10.7
Aerospace	24.1	5.2	0.5	1.2	2.0	1.9	1.5	2.5	2.3	1.2	0.8
Electronics	0.5	0.7	0.6	1.0	1.0	-2.4	2.1	4.3	1.0	1.4	3.0
Material Design	0.0	0.1	2.2	0.0	0.5	-3.3	0.3	0.1	0.0	0.1	0.0
Life Sciences	0.8	0.8	1.3	2.6	3.5	4.3	3.0	2.3	2.3	2.0	2.1
Opto-Electronics	0.4	0.9	1.0	2.3	1.4	-0.5	1.0	1.7	1.3	1.2	1.6
Weapons and Nuclear	0.5	0.1	0.3	0.6	0.2	0.2	0.3	0.3	0.2	0.1	0.3
Biotechnology	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.0	0.0
Total	**51.4**	**26.0**	**30.3**	**50.7**	**75.7**	**72.2**	**73.0**	**98.0**	**103.7**	**93.9**	**62.4**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-33.1	41.7	71.5	61.1	-0.6	6.8	43.9	3.8	-6.9	-42.6
Computer Integrated Manufacturing	-5.4	13.4	95.0	38.2	39.5	-53.3	-21.6	89.4	-20.5	-7.8
Aerospace	-5.2	67.8	106.3	33.9	21.6	-30.5	-23.0	-0.9	-11.6	-28.8
Electronics	29.1	-17.2	71.6	1.7	-334.3	-187.3	103.6	-76.6	44.9	109.8
Material Design	-78.5	-89.7	114.7	76.1	-6.5	-18.7	59.3	-7.3	-48.9	-100.0
Life Sciences	114.9	9.7	118.7	-37.7	-133.8	-311.4	72.1	-23.3	-11.4	5.2
Opto-Electronics	402.1	1678.2	-99.9	21685.9	-704.5	-107.8	-50.2	-96.7	1571.8	36.4
Weapons and Nuclear	-82.1	198.2	95.4	-59.4	-8.5	32.3	15.2	-47.2	-63.4	352.3
Biotechnology		654.2	154.5	100.5	15.4	-43.7	143.9	-100.0		
Total	**-49.5**	**16.7**	**67.3**	**49.3**	**-4.6**	**1.1**	**34.4**	**5.7**	**-9.4**	**-33.6**

Source: BC STATS and Statistics Canada

Detailed Table 33. Imports of High Technology Goods from the Pacific Rim (excluding Japan), by Commodity Group, 1989-1999

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	133.7	145.2	168.1	204.5	239.8	301.3	327.1	90.5	101.4	123.4	162.9
Computer Integrated Manufacturing	-66.0	-76.0	-86.6	-101.7	-102.0	-111.6	-112.5	6.4	7.9	6.0	6.1
Aerospace	1.0	1.1	1.9	0.8	1.6	1.6	1.7	2.3	2.3	2.9	4.0
Electronics	7.8	8.7	9.2	13.0	21.9	32.6	51.6	10.3	13.8	37.2	38.8
Material Design	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.2	0.1	0.3	1.0
Life Sciences	6.6	7.2	7.4	8.2	8.2	19.5	22.9	29.0	18.8	10.2	15.7
Opto-Electronics	0.5	0.7	0.7	1.1	1.6	1.8	2.2	1.9	3.7	15.6	13.6
Weapons and Nuclear	4.7	4.3	1.4	2.6	2.5	2.7	4.4	6.1	5.3	3.4	3.5
Biotechnology	0.1	0.2	0.0	0.1	0.1	0.1	0.2	0.1	0.1	1.2	1.9
Total	**88.6**	**91.4**	**102.0**	**128.5**	**173.8**	**248.0**	**297.8**	**146.7**	**153.4**	**200.2**	**247.6**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	8.6	15.8	21.6	17.3	25.6	8.6	-72.3	12.1	21.6	32.0
Computer Integrated Manufacturing	15.2	13.9	17.4	0.3	9.5	0.8	-105.7	22.0	-23.4	1.3
Aerospace	9.0	1.7	10.9	0.7	137.9	17.2	26.7	-35.1	-46.0	55.0
Electronics	12.0	5.3	42.3	68.1	48.7	58.6	-80.0	34.0	169.1	4.4
Material Design	5.2	71.4	-58.6	110.1	-4.2	10.9	29.4	1.0	27.3	39.5
Life Sciences	27.5	0.8	68.9	38.7	15.9	21.1	-14.3	98.3	317.6	-12.5
Opto-Electronics	-44.6	-35.6	-39.3	39.3	65.3	106.7	56.8	-70.0	482.9	203.2
Weapons and Nuclear	-9.2	-67.3	85.3	-1.9	7.7	62.2	36.5	-13.4	-35.1	1.6
Biotechnology	19.2	-74.5	21.9	77.0	-14.1	130.3	-67.0	127.8	791.4	58.5
Total	**3.1**	**11.7**	**25.9**	**35.3**	**42.7**	**20.1**	**-50.8**	**4.6**	**30.5**	**23.7**

Source: BC STATS and Statistics Canada

Detailed Table 34. Balance of Trade in High Technology Goods with the Pacific Rim (excluding Japan), by Commodity Group, 1989-1999

Balance ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-114.0	-132.0	-149.4	-172.4	-188.1	-249.9	-272.2	-11.5	-19.5	-47.1	-119.1
Computer Integrated Manufacturing	71.2	81.0	92.2	112.7	117.1	132.8	122.3	1.3	6.8	5.6	4.6
Aerospace	23.1	4.1	-1.3	0.4	0.4	0.3	-0.2	0.2	0.0	-1.7	-3.2
Electronics	-7.2	-8.0	-8.6	-12.0	-20.9	-35.0	-49.5	-6.0	-12.8	-35.7	-35.8
Material Design	-0.1	0.1	2.2	0.0	0.5	-3.4	0.1	-0.1	-0.1	-0.3	-1.0
Life Sciences	-5.8	-6.5	-6.1	-5.5	-4.7	-15.2	-19.9	-26.7	-16.5	-8.1	-13.6
Opto-Electronics	-0.1	0.3	0.4	1.1	-0.2	-2.3	-1.2	-0.1	-2.4	-14.4	-12.0
Weapons and Nuclear	-4.2	-4.2	-1.1	-2.0	-2.3	-2.5	-4.2	-5.7	-5.1	-3.3	-3.2
Biotechnology	-0.1	-0.2	0.0	0.0	0.0	0.0	-0.1	0.1	-0.1	-1.2	-1.9
Total	**-37.2**	**-65.4**	**-71.7**	**-77.8**	**-98.2**	**-175.8**	**-224.9**	**-48.6**	**-49.7**	**-106.3**	**-185.2**

Source: BC STATS and Statistics Canada

Detailed Table 35. Exports of High Technology Goods to the European Union, by Commodity Group, 1989-1999

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	9.3	12.5	12.4	13.0	15.5	23.7	21.7	10.8	17.5	12.7	8.3
Computer Integrated Manufacturing	3.5	2.3	3.5	6.7	4.0	4.7	6.2	5.2	5.5	6.3	5.7
Aerospace	9.4	23.7	2.2	1.2	8.6	1.2	2.8	2.7	1.4	3.1	3.7
Electronics	0.2	0.1	0.1	0.6	0.7	2.0	1.5	1.4	0.8	2.1	5.5
Material Design	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Life Sciences	2.2	2.4	2.1	2.2	1.9	1.6	2.2	1.7	2.0	4.6	4.9
Opto-Electronics	1.4	1.6	1.2	1.0	2.5	2.1	3.1	2.0	5.4	7.0	8.4
Weapons and Nuclear	0.2	0.1	0.1	0.1	0.3	0.1	0.9	0.3	0.0	0.3	1.0
Biotechnology	0.0	0.0	0.0	0.0	0.1	0.1	1.0	0.0	0.1	0.3	0.0
Total	**26.4**	**42.9**	**21.7**	**24.9**	**33.5**	**35.6**	**39.4**	**24.2**	**32.5**	**36.4**	**37.5**

% change from previous year

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	34.4	-0.4	4.7	19.4	52.6	-8.6	-49.9	60.9	-27.3	-34.5
Computer Integrated Manufacturing	-33.2	51.6	92.5	-40.9	17.6	33.4	-17.1	5.6	16.1	-10.4
Aerospace	152.3	-90.7	-43.6	589.9	-85.7	128.1	-3.7	-49.2	128.6	17.2
Electronics	-50.2	12.9	384.3	0.9	209.0	-25.0	-6.9	-45.6	173.7	161.5
Material Design	-33.1	-98.6	306.8	-23.1	2084.4	-100.0		-100.0		
Life Sciences	10.0	-13.3	4.8	-10.6	-19.4	37.8	-19.6	15.6	129.1	6.5
Opto-Electronics	14.7	-28.1	-14.9	146.4	-13.3	46.9	-34.7	162.1	31.7	19.3
Weapons and Nuclear	-54.4	80.2	-32.3	192.6	-80.9	1671.1	-68.3	-93.2	1165.9	284.7
Biotechnology		166.2	-60.0	311.0	20.3	1005.0	-98.4	228.9	440.3	-85.1
Total	**62.5**	**-49.4**	**14.8**	**34.5**	**6.2**	**10.7**	**-38.6**	**34.1**	**12.2**	**2.9**

Source: BC STATS and Statistics Canada

Detailed Table 36. Imports of High Technology Goods from the European Union, 1989-1999

Values ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	29.6	31.3	35.7	42.8	47.4	58.3	63.8	29.1	33.6	40.2	60.8
Computer Integrated Manufacturing	22.7	24.2	21.8	21.7	26.1	31.8	56.7	40.1	47.3	33.6	38.3
Aerospace	78.2	72.2	115.0	122.8	67.7	51.0	88.4	110.6	290.4	234.8	304.8
Electronics	4.9	6.2	10.0	6.6	8.2	20.1	23.0	6.3	6.3	12.5	15.7
Material Design	0.2	0.2	0.5	0.3	0.6	0.4	0.7	1.0	0.9	2.8	3.3
Life Sciences	50.3	59.5	69.5	83.3	110.4	130.3	188.0	178.2	176.0	75.2	88.5
Opto-Electronics	1.8	1.8	1.3	1.2	1.6	2.6	2.3	2.3	3.5	5.9	6.9
Weapons and Nuclear	4.2	5.2	3.8	4.5	4.1	8.6	6.9	7.7	9.0	16.2	18.4
Biotechnology	2.1	2.1	2.1	3.1	3.5	4.8	5.4	6.6	9.4	12.9	9.5
Total	**194.1**	**202.8**	**259.7**	**286.3**	**269.6**	**307.9**	**435.1**	**381.9**	**576.5**	**434.1**	**546.4**

Year-Over-Year Growth — **% change from previous year**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	5.9	13.9	20.0	10.6	23.0	9.4	-54.4	15.8	19.4	51.2
Computer Integrated Manufacturing	6.7	-9.9	-0.6	20.6	21.6	78.5	-29.3	17.9	-29.0	14.2
Aerospace	-7.7	59.3	6.8	-44.9	-24.6	73.3	25.2	162.5	-19.1	29.8
Electronics	25.4	62.2	-34.1	24.8	144.3	14.2	-72.6	0.7	97.1	26.2
Material Design	-4.7	144.4	-39.0	84.5	-34.9	86.9	35.1	-5.3	203.7	18.2
Life Sciences	18.3	16.8	19.8	32.5	18.0	44.2	-5.2	-1.2	-57.3	17.7
Opto-Electronics	0.2	-28.1	-11.3	39.2	59.4	-10.7	-0.1	52.1	68.5	17.1
Weapons and Nuclear	24.0	-27.7	19.4	-9.6	111.3	-20.0	12.0	17.0	79.4	13.7
Biotechnology	-1.4	0.4	50.3	12.3	38.0	11.6	22.7	41.9	38.1	-26.1
Total	**4.5**	**28.1**	**10.2**	**-5.8**	**14.2**	**41.3**	**-12.2**	**51.0**	**-24.7**	**25.9**

Source: BC STATS and Statistics Canada

Detailed Table 37. Balance of Trade in High Technology Goods with the European Union, by Commodity Group, 1989-1999

Balance ($ million)

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Computers and Telecommunications	-20.3	-18.8	-23.3	-29.8	-31.8	-34.6	-42.1	-18.2	-16.2	-27.5	-52.5
Computer Integrated Manufacturing	-19.2	-21.9	-18.3	-14.9	-22.1	-27.1	-50.5	-34.9	-41.8	-27.2	-32.7
Aerospace	-68.9	-48.5	-112.8	-121.5	-59.1	-49.8	-85.6	-107.9	-289.1	-231.7	-301.1
Electronics	-4.7	-6.0	-9.9	-6.0	-7.6	-18.1	-21.5	-4.9	-5.6	-10.4	-10.3
Material Design	0.0	-0.1	-0.5	-0.3	-0.6	-0.2	-0.7	-1.0	-0.9	-2.8	-3.3
Life Sciences	-48.1	-57.1	-67.5	-81.1	-108.5	-128.7	-185.8	-176.5	-174.0	-70.6	-83.6
Opto-Electronics	-0.4	-0.2	-0.1	-0.2	0.8	-0.5	0.8	-0.3	1.8	1.1	1.5
Weapons and Nuclear	-4.1	-5.2	-3.6	-4.4	-3.8	-8.6	-6.0	-7.4	-9.0	-16.0	-17.5
Biotechnology	-2.1	-2.0	-2.0	-3.1	-3.4	-4.7	-4.4	-6.6	-9.3	-12.6	-9.5
Total	**-167.7**	**-159.9**	**-238.0**	**-261.4**	**-236.1**	**-272.3**	**-395.6**	**-357.6**	**-544.0**	**-397.7**	**-508.9**

Source: BC STATS and Statistics Canada

Detailed Table 38. Export of High Technology Services, 1991-1997

	Value ($ million)						
	1991	1992	1993	1994	1995	1996	1997
High Technology Service Exports							
Computer Services	35	78	163	163	208	208	241
Engineering Services	56	67	102	106	138	174	374
Total	**91**	**145**	**265**	**269**	**346**	**382**	**615**

	change from previous year					
	1992	1993	1994	1995	1996	1997
High Technology Service Exports						
Computer Services	122.9	109.0	0.0	27.6	0.0	15.9
Engineering Services	19.6	52.2	3.9	30.2	25.7	115.3
Total	**59.3**	**82.8**	**1.5**	**28.6**	**10.3**	**61.1**

Source: Statistics Canada

6 Appendix A: Defining the High Technology Sector

How was the sector definition arrived at?

In 1995, BC STATS and the Science and Technology Division of the Ministry of Employment and Investment[1] developed a definition of the high technology sector that focuses on standard industries that produce high technology goods and services as their ultimate outputs. The definition looked at the high tech outputs of various standard industries (industries defined in the Canadian Standard Industrial Classification–SIC), their level of research activity, their representation in existing lists of high tech companies, and the opinions of an expert panel drawn from government, university, and the private sector.[2]

Utilizing an approach that conforms to the industrial structure upon which Statistics Canada's data are compiled, it is possible to take advantage of the impressive array of data already collected by the national statistical agency and to create time series of data values.

Are all high tech companies included?

It is recognized that there are some drawbacks to the industry-based definition employed here. The first is that the Standard Industrial Classification system, developed in the late 1970s, does not fully recognize industries of the "new economy." As a result, new products and services are oft-times grouped in an industry that primarily produces similar but distinctly different products and services.

Second, it is difficult to capture the full breadth of high technology or knowledge-intensive activity in the economy through SIC-based definitions. Innovation is not unique to a specific group of industries, but can be found throughout the whole economy. Some firms on the "leading edge" will be missed if they are classified in industries that, in aggregate, fail to show high tech characteristics. On the other hand, it is impossible to remove those firms in the industries in the sector that lag behind the industry norm.

The industries included in the definition adopted for this profile represent the core of the high technology sector. While it is certainly true that examples of creativity and innovation can be found in every industry, this definition, with its industry focus, includes only those industries where high technology activity is concentrated.

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[1] Now the Science, Technology and Telecommunications Division of the Information, Science and Technology Agency.

[2] The complete methodology is presented in Lawrance and Miller, Defining the British Columbia High Technology/Knowledge Sector, 1996. This

Exactly which industries are included?

The table below lists the industries that are defined, for the purpose of this report, to constitute the high technology sector. Where the weight column indicates a "✓", 100% of the industry is included in the high technology sector. Where numbers are given, they indicate the percentage of the industry that meets the definition of high technology.

Industries[1] in the High Technology Sector

SIC [2]	Industry	Sector	Weight
3211	Aircraft and Aircraft Parts Industry	Manufacturing	✓
3351	Telecommunications Equipment Industry	Manufacturing	✓
3352	Electronic Parts and Components	Manufacturing	✓
3359	Other Communication and Electronic Equipment	Manufacturing	✓
3361	Electronic Computing and Peripheral Equipment	Manufacturing	✓
3362	Electronic Office, Store and Business Machines	Manufacturing	✓
3369	Other Office, Stores and Business Machines	Manufacturing	✓
3372	Electrical Switchgear and Protective Equipment	Manufacturing	✓
3379	Other Electrical Industrial Equipment Industries	Manufacturing	✓
3741	Pharmaceutical and Medicine Industries	Manufacturing	✓
3911	Indicating, Recording and Controlling Instruments	Manufacturing	✓
3912	Other Instruments and Related Products	Manufacturing	✓
772	Computer and Related Services	Services	✓
7752	Offices Of Engineers	Services	✓
7759	Other Scientific and Technical Services	Services	✓
868	Health and Other Medical Laboratories	Services	✓
3192	Construction, Mining Machinery and Materials Handling	Manufacturing	13
3194	Turbine and Mechanical Power Transmission Equipment	Manufacturing	6
3199	Other Machinery and Equipment Industries N.E.C.	Manufacturing	3
3271	Shipbuilding and Repair Industry	Manufacturing	11
3381	Communications and Energy Wire and Cable Industry	Manufacturing	41
3711	Industrial Inorganic Chemical Industries N.E.C.	Manufacturing	10
3994	Musical Instrument and Sound Recording	Manufacturing	11
3999	Other Manufactured Products Industries	Manufacturing	6

Note:

For the purposes of this report, SIC industries 3741 and 3711 are grouped together as "37grp", and 3271, 3381, and 3994 combine to form "3grp".

It is felt that this definition is but a starting point. The introduction of the North American Industry Classification System (NAICS) in the next few years will give BC STATS the opportunity to revisit the definition, and refine it to better reflect the nature of the high technology sector in BC.

paper is available at
http://www.bcstats.gov.bc.ca/data/bus_stat/hi_tech.htm

7 Appendix B: Defining High Technology Commodities

Exports and imports

In this report, trade in high technology goods refers to high technology commodities produced by the 20 manufacturing industries included in the high technology definition. While it is possible for an industry outside the sector to produce and export a particular commodity, this is generally not the case. Almost all exports of high tech goods originate from the 20 high tech manufacturing industries; in 1994, only 1% of high technology goods exports were produced by industries not included in the definition.

The imports tables are based on the same group of commodities. An estimate of BC destination imports was derived using the consumption of imports of those commodities by the BC economy.

Data for trade in goods are sourced from Statistics Canada and are provided through the Trade Research and Inquiry Package (TRIP) computer reporting system at BC STATS. TRIP offers user-defined tabulations of export or import statistics for BC, Canada, the United States and other countries. Tabulations can include information on commodities, countries, US states, years, months, mode of transport, etc.

Defining high technology commodities

The U.S. Bureau of the Census' advanced technology products (ATP) list[1] was used to identify high tech commodities in British Columbia's exports and imports. The ATP list of 223, six-digit, HS commodity codes was matched against BC's commodity exports for each of the years 1988 through 1994.[2] This process identified the set of high technology commodities exported each year from British Columbia.

To determine the industry source of these exports, the exported high technology commodities were matched against a concordance that linked commodities to industries. For instance, the concordance assigned exports of aircraft parts to SIC 3211, the Aircraft and Aircraft Parts Industry. Exports assigned to industries not included in the high technology definition were ignored. However, as mentioned earlier, these represent only about 1% of total high technology commodity exports.

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[1]See McGuckin, Robert H., Thomas A. Abbott, Paul Herrick, and Leroy Norfolk. 1991. *Measuring Advanced-Technology Products Trade: A New Approach*. US Bureau of the Census, for a discussion of the development and content of this list.

[2]Trade data for British Columbia are sourced from Statistics Canada and are available from the Trade Research and Inquiry Package (TRIP) computer reporting system at BC STATS.

Unlike data reported for shipments, employment etc., export data are not adjusted by production weights for the eight weighted industries. This is because the ATP list provides a more accurate measure of the high technology component of exports than would production weights applied to total exports. Similarly, export figures for the 16 unweighted industries do not represent total exports for those industries; but, rather, that portion of their exports that is identified as high technology.

Commodity groups

The U.S. Bureau of the Census has defined ten fields involving advanced- or high technology commodities. Each field represents a large number of products and processes that are considered to be on the leading edge. These fields have been used to classify exports in this report.

Biotechnology

Biotechnology covers recent developments in recombinant deoxyribonucleic acid (DNA) research and genetic engineering. Obvious examples include: drugs, enzymes, and other therapeutic items. Common applications include agricultural production, and the use of microorganisms for the production of drugs and other complex molecules.

Life Sciences (Medical)

This field encompasses the application of scientific advances to medical sciences. Recent advances such as nuclear resonance imaging, echocardio-graphs, and total-patient monitoring systems are examples of products developed from recent technological advances in this field. Also, recent increases in the strength of materials and reductions in their weight has led to improved internally implemented fixation devices and prostheses.

Opto-Electronics

Opto-electronics is generally defined as the expanded development and application of the laser. Also included are recent advances in photoelectric cells and diodes, photographic and other imaging equipment, and fiber-optic cables.

Computer and Telecommunications

This field covers technological advances affecting both computers and telecommunications hardware products. The primary advances in this field are on developing hardware that can more quickly process information. Important breakthroughs are expected in the areas of artificial intelligence and parallel processing.

Electronics

The miniaturization of electronic components is the most important recent technoogical advance in the field of electronics. Some technologies ncluded are integrated circuits, semiconductors, such as transistors and diodes, as well as new developments in

surface mounting of electronic components such as capacitors and resistors.

Computer Integrated Manufacturing

This field includes developments in robotics and numerically-controlled (NC) machines. These products have a significant impact on industrial automation. Robots and NC machines perform increasingly sophisticated operations through developments in sensory and visual capabilities of machines. With these breakthroughs the manufacturing processes have increased in flexibility and require less human intervention to operate and maintain production machinery. Many of the new automation technologies are made possible because of breakthroughs in the application and development of faster smaller components.

Materials Design

Materials design includes the newest methods of production for products that already exist in the market as well as the development of new products. Recent examples of technological advancements include high temperature superconductors, advanced polymers that expand the areas of plastic use, and new ultra clear glass that allows fiber optic cable to be used for long distance communication.

Aerospace

Technological developments in this field include advances that allow planes to fly further, faster, and higher, to use less fuel, and to have quieter engines. Many of the advances have been adapted to military applications, such as vertical take-off aircraft and aircraft that require shorter distances for takeoff and landings.

Weapons

This field covers all advanced methods used for the development, guidance, and control of weapons intended for national or personal protection and deterrence. Many of the developments in this area are the result of breakthroughs in computers and telecommunications as well as aerospace technologies.

Nuclear Technology

This field covers developments in nuclear power production and primary nuclear reactors. It includes newly designed reactor components that improve the safety and efficiency of nuclear power plants. It also includes developments in the creation and packaging of nuclear fuel, the application of atomic physics to medical, and other areas of science.

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